

# SAPTHAGIRI COLLEGE OF ENGINEERING


14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

## Department of Computer Science and Engineering



### CERTIFICATE

Certified that the project work entitled "An efficient method for detection of leakage of sensitive data" carried out by Mrs. Chaitra H.V (1SG16SCS01), a bonafide student of Sapthagiri College of Engineering, Bengaluru in the partial fulfillment for the award of Master of Technology in Computer Science & Engineering of the Visvesvaraya Technological University, Belagavi during the year 2018-2019. It is certified that all corrections/suggestions indicated for the Internal Assessment have been incorporated in the Report deposited in the departmental library. The Project report has been approved as it satisfies the academic requirements in respect of project work (16SCS44) prescribed for the said degree.

  
Professor & Head of the Department  
Computer Science Engineering  
Sapthagiri College of Engineering  
Bengaluru-57

Signature of Guide

Dr. Yogish H.K

Professor & HOD

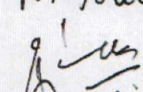
  
31/10/18

Signature of the Principal

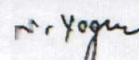
Principal  
Dr. K.L. Shivabasappa  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road  
Bengaluru-560 057


#### External viva

Name of the Examiners

1. N. YOGESH
2. 

Signature of the Examiner and date

 14/11/18

 14/11/18

Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bengaluru-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

BENGALURU-560057

(Affiliated to Visvesvaraya Technological University, Belagavi, Karnataka)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING



## CERTIFICATE

Certified that the dissertation work entitled "STRUCTURE BASED SYBIL DETECTION AND RANKING IN ONLINE SOCIAL NETWORK" carried out by Latha K (1SG13SCS03), a bonafide student of Sapthagiri College Of Engineering, Bengaluru, in partial fulfillment for the award of Master of Technology in Computer Science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2017-2018. It is certified that all the corrections/suggestions have been incorporated in the dissertation deposited in the department library. the dissertation report has been approved as it satisfies the academic requirements in respect of dissertation work prescribed for the said degree.

Signature of Guide  
**Ramangouda S Patil**  
Assistant Professor

Signature of HOD  
**Dr. Yogish H.K**  
Professor & HOD

Signature of Principal  
**Dr. Aswatha Kumar**  
Principal  
Dr. Aswatha Kumar, M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057

**External Viva**

Name of the Examiners

Signature of the Examiners with date

**Principal**  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta R  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

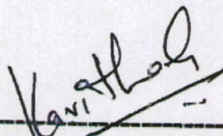
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

Department of Computer Science and Engineering

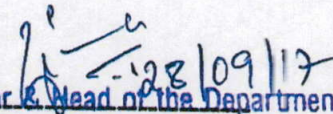


## CERTIFICATE


Certified that the project work entitled "Security Enhancement to Exchange Health Information on Cloud" carried out by **Ms. HEMALATHA K (1SG15SCS03)**, a bonafide student of **Sapthagiri College of Engineering, Bengaluru** in the partial fulfillment for the award of **Master of Technology in Computer Science & Engineering of Visvesvaraya Technological University, Belagavi** during the year **2016-2017**. It is certified that all corrections/suggestions indicated in the report. The Project report has been approved as it satisfies the academic requirements in respect of project work (14SCS44) prescribed for the said degree.

  
Signature of the Guide

Mrs. Kavitha G  
Assistant. Professor

  
Professor & Head of the Department  
Signature of HOD  
Computer Science & Engineering  
Sapthagiri College of Engineering


Dr. Yogish H K  
Professor & HOD

  
Signature of the Principal

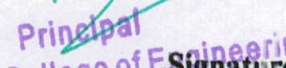
Dr. M. Aswatha Kumar  
Dr. Aswatha Kumar. M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057

### External viva

Name of the Examiner

1. Kavitha - 

2. 

  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057  
Signature of the Examiners with date



# SAPTHAGIRI COLLEGE OF ENGINEERING

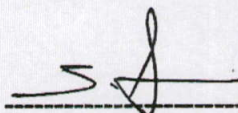
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

Department of Computer Science and Engineering

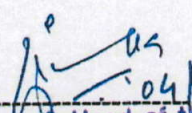


## CERTIFICATE

Certified that the project work entitled "**Exploring the Similarity and Dissimilarity of User Opinions for Sentiment Analysis in Heterogeneous Networks**" carried out by **SANDEEP B S (ISG15SCS10)**, a bonafide student of **Sapthagiri College of Engineering, Bengaluru** in the partial fulfillment for the award of **Master of Technology** in **Computer Science & Engineering** of **Visvesvaraya Technological University, Belagavi** during the year **2016-2017**. It is certified that all corrections/suggestions indicated in the report. The Project report has been approved as it satisfies the academic requirements in respect of project work (14SCS44) prescribed for the said degree.

  
Signature of the Guide

Prof. Suriya Prakash J  
Assistant Professor

  
Signature of the HOD  
Professor & Head of the Department  
Computer Science Engineering  
Sapthagiri College of Engineering  
Bengaluru-57

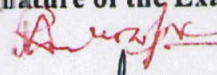
  
Signature of the Principal  
Dr. M. Aswatha Kumar, M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057


### External viva

Name of the Examiners

1. *Ravindra Prasad. S*
2. *S. Surya Prakash*

Signature of the Examiners with date

  
6/10/17

  
6/10/17

  
Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

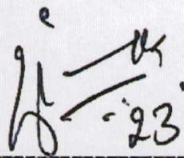
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057


Department of Computer Science and Engineering



## CERTIFICATE

Certified that the project work entitled "**An Efficient Resource Management Method for Cloud**" carried out by **Mrs. ASHWINI M (1SG15SCS01)**, a bonafide student of **Sapthagiri College of Engineering, Bengaluru** in the partial fulfillment for the award of **Master of Technology in Computer Science & Engineering** of **Visvesvaraya Technological University, Belagavi** during the year **2016-2017**. It is certified that all corrections/suggestions indicated in the report. The Project report has been approved as it satisfies the academic requirements in respect of project work (14SCS44) prescribed for the said degree.


  
23/09/17  
Professor & Head of the Department  
Computer Science Engineering  
Sapthagiri College of Engineering  
Bengaluru-57  
Professor & HOD

  
Signature of the Principal  
Dr. Aswatha Kumar. M  
Dr. M. Aswatha Kumar  
Sapthagiri College of Engineering  
14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057

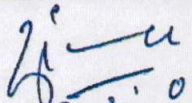
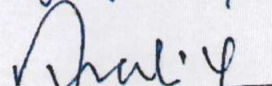
### External viva

Name of the Examiner

1. Dr. Yogish H.K
2. Prof. Murali.G.

  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057

Signature of the Examiner with date

  
05/10/17  
  
05/10/17



# SAPTHAGIRI COLLEGE OF ENGINEERING

14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

Department of Computer Science and Engineering



## CERTIFICATE

Certified that the project work entitled "News Content Extraction from Web Pages Using Google API" carried out by **NEHA M (1SG14SCS09)**, a bonafide student of **Sapthagiri College of Engineering, Bengaluru** in the partial fulfillment for the award of **Master of Technology in Computer Science & Engineering** of **Visvesvaraya Technological University, Belagavi** during the year **2016-2017**. It is certified that all corrections/suggestions indicated in the report. The Project report has been approved as it satisfies the academic requirements in respect of project work (14SCS44) prescribed for the said degree.

Signature of the Guide

Mr. Ashok K Patil

Assistant Professor

Signature of the HOD

Dr. Yogish H K

Professor & HOD

Signature of the Principal

Dr. M. Aswatha Kumar

Dr. Aswatha Kumar. M

Principal Principal

Sapthagiri College of Engineering

No. 14/5, Chikkasandra,

Hesaraghatta Main Road,

Bangalore-560 057

External viva

Name of the Examiners

1. Dr. Hemalatha K.L.

2. Dr. Anil K. L.

Dr. Anil K. L.

Signature of the Examiners with date

Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

14/5, Chikkasandra, Hesarghatta Main Road, Bangalore-560057

Department Of Computer Science and Engineering



## CERTIFICATE

Certified that the project work entitled "**Enhanced initial seed selection algorithm for efficient clustering of high dimensional data**" carried out by Ms. AMBIKA S (ISG14SCS02), a bonafide student of Sapthagiri College of Engineering, Bangalore in the partial fulfillment for the award of **Master of Technology in Computer Science & Engineering** of the **Visvesvaraya Technological University**, Belgaum during the year **2016-2017**. It is certified that all corrections/suggestions indicated in the report. The Project report has been approved as it satisfies the academic requirements in respect of project work (14SCS44) prescribed for the said degree.

Signature of the Guide

Mrs. Kavitha G  
Assistant Professor

Signature of the HOD

Dr. Yogish H.K  
Professor & HOD

Signature of the Principal

Dr. M. Aswatha Kumar  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057

### External viva

Name of the examiners

1. Kavitha G
2. Dr. M. Aswatha Kumar

Signature of the examiners with date

Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesarghatta  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

BENGALURU-560057

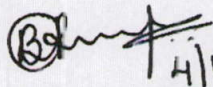
(Affiliated to Visvesvaraya Technological University, Belgaum, Karnataka)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING



## CERTIFICATE

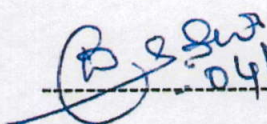
Certified that the dissertation work entitled "MINING HIGH UTILITY ITEMSETS IN TRANSACTIONAL DATASET" carried out by Sowmya R B (1SG14SCS16), a bonafide student of Sapthagiri College of Engineering, Bangalore, in partial fulfillment for the award of Master of Technology in Computer Science and Engineering of Visvesvaraya Technological University, Belgaum during the academic year 2015-2016. It is certified that all the corrections/suggestions have been incorporated in the dissertation deposited in the departmental library. The dissertation report [14SCS44] has been approved as it satisfies the academic requirements in respect of dissertation work prescribed for the said degree.

  
4/10/16

Signature of the Guide

Mrs. Roopa Banakar

Assistant Professor

  
04/10/16

Signature of HOD

Dr. C.M. Prashanth

Professor & H.O.D



Signature of principal

Dr. M. Aswatha Kumar

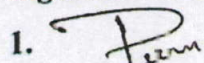

Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore - 560 057.

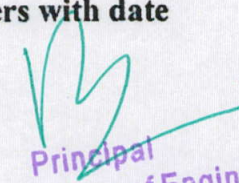
### External viva

Name of the examiners

1. Dr. C.S. Pillai
2. Roopa Banakar

Signature of the Examiners with date

1. 
2. 

  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore - 560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

BENGALURU-560057

(Affiliated to Visvesvaraya Technological University, Belgaum, Karnataka)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING



## CERTIFICATE

Certified that the dissertation work entitled "AN EFFICIENT MECHANISM FOR CLASSIFICATION OF IMBALANCED DATA" carried out by KRITHIKA M V (1SG14SCS08), a bonafide student of Sapthagiri College of Engineering, Bangalore, in partial fulfillment for the award of Master of Technology in Computer Science and Engineering of Visvesvaraya Technological University, Belgaum during the academic year 2015-2016. It is certified that all the corrections/suggestions have been incorporated in the dissertation deposited in the departmental library. The dissertation report[14SCS44] has been approved as it satisfies the academic requirements in respect of dissertation work prescribed for the said degree.

*Rajeev Bilagi*

16.08.2016

Signature of the Guide

Prof. Rajeev Bilagi

Associate Professor

*Dr. C.M. Prashanth*

16/8/2016

Signature of HOD

Dr. C.M. Prashanth

Professor & H.O.D

*Dr. M. Aswatha Kumar*

Signature of Principal

Dr. M. Aswatha Kumar

Dr. Aswatha Kumar. M

Principal

Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057

### External viva

Name of the examiners

1. Rajeev Bilagi
2. Madhu N.

Signature of the Examiners with date

1. *Rajeev Bilagi* 19/8/2016
2. *Madhu N.* 19/8/2016

Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

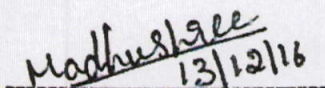
14/5, Chikkasandra, Hesarghatta Main Road, Bangalore-560057

Department Of Computer Science and Engineering



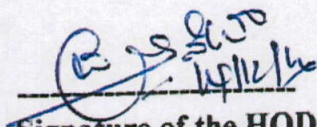
## CERTIFICATE

Certified that the project work entitled “**Segmenting Customer Using Association Rule Mining On Big Data**” carried out by Miss. Supriya Koganurmath (1SG14SCS19), a bonafide student of Sapthagiri college of engineering, Bangalore in the partial fulfillment for the award of **Master of Technology in Computer Science & Engineering** of the Visvesvaraya Technological University, Belgaum during the year **2015-2016**. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The Project report has been approved as it satisfies the academic requirements with respect to the project work (14SCS44) prescribed for the said degree.

  
13/12/16

Signature of the Guide

Mrs. Madhushree  
Assistant Professor

  
14/12/16

Signature of the HOD

Dr. C. M. Prashanth  
Professor & HOD



Signature of the Principal

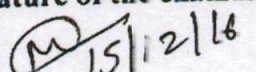
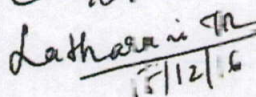
Dr. M. Aswatha Kumar  
Principal

### External viva

Name of the examiners

1. Madhushree
2. Latha Rani, T. R.

Signature of the examiners with date

  
15/12/16  
  
15/12/16

  
Principal

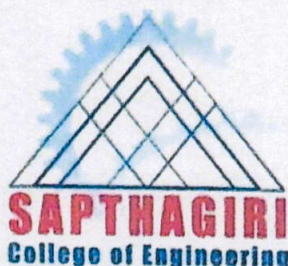
Sapthagiri College of Engineering  
Chikkasandra, Hesarghatta Road,  
Bangalore- 560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

14/5, Chikkasandra, Hesarghatta Main Road, Bangalore-560057  
(Affiliated to Visvesvaraya Technological University, Belgaum, Karnataka.)

Department Of Computer Science and Engineering



## CERTIFICATE

Certified that the project work entitled "A context aware rules recommendations system for similar users" carried out by Mrs. Pushpa L (1SG14SCS12), a bonafide student of Sapthagiri college of engineering, Bangalore in the partial fulfillment for the award of Master of Technology in Computer Science & Engineering of the Visvesvaraya Technological University, Belgaum during the year 2015-2016. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The Project report has been approved as it satisfies the academic requirements with respect to the project work (14SCS44) prescribed for the said degree.

Signature of the Guide

Mrs. Ragini Krishna  
Assistant Professor

### External viva

Name of the examiners

1. Ragini Krishna
2. Varalakshmi

Signature of the HOD

Dr. C.M. Prashanth  
Professor & HOD

Signature of the Principal

Dr. M. Aswatha Kumar, M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesarghatta Main Road,  
Bangalore-560 057

Signature of the examiners with date

  
  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesarghatta Road,  
Bangalore- 560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

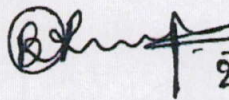
14/5, Chikkasandra, Hesarghatta Main Road, Bangalore-560057

Department Of Computer Science and Engineering




## CERTIFICATE

Certified that the project work entitled "Detection of Wormhole Attack using T-AOMDV Protocol" carried out by Ms. SEEMA B.P. (1SG14SCS14), a bonafide student of Sapthagiri College of Engineering, Bangalore in the partial fulfillment for the award of Master of Technology in Computer Science & Engineering of the Visvesvaraya Technological University, Belgaum during the year 2015-2016. It is certified that all corrections/suggestions indicated in the report. The Project report has been approved as it satisfies the academic requirements in respect of project work (14SCS44) prescribed for the said degree.

 27/4/17

Signature of the Guide

Mrs. Roopa Banakar  
Assistant Professor

 27/4/17

Signature of the HOD

Dr.C.M.Prashanth  
Professor & HOD



Signature of the Principal

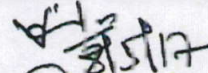
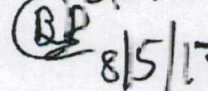
Dr. M. Aswatha Kumar  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore - 560 057.


### External viva

Name of the examiners

1. Dr. Vinde Shetty
2. Roopa Banakar

Signature of the examiners with date

 8/5/17  
 8/5/17

  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore - 560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

14/5, Chikkasandra, Hesaraghatta Main Road, Bangalore-560057

Department Of Computer Science and Engineering



## CERTIFICATE

Certified that the project work entitled "**Classification of big data stream using enhanced ensemble classifier**" carried out by Mrs.Usha.B.P (1SG14SCS20), a bonafide student of Sapthagiri college of engineering, Bangalore in the partial fulfillment for the award of **Master of Technology in Computer Science & Engineering** of the **Visvesvaraya Technological University, Belgaum** during the year **2015-2016**. It is certified that all corrections/suggestions indicated have been incorporated in the report deposited in the department library. The Project report has been approved as it satisfies the academic requirements in respect of project work (14SCS44) prescribed for the said degree.

J. Sushmitha

Signature of the Guide

Mrs. Sushmitha.J

Assistant Professor

Dr C.M.Prashanth  
22/10/16

Signature of HOD

Dr C.M.Prashanth

Professor & HOD

Dr M. Aswatha Kumar

Signature of principal

Dr M. Aswatha Kumar, M  
Principal

Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore - 560 057.

### External viva

Name of the examiners

1. Sushmitha J
2. Sushra T M

Signature of the examiners with date

J. Sushmitha 25/10/16  
Sushra T M 25/10/16

Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore - 560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

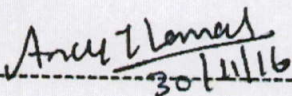
14/5, Chikkasandra, Hesaraghatta Main Road, Bangalore-560057

Department of Computer Science and Engineering



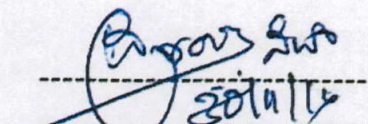
## CERTIFICATE

Certified that the project work entitled "Filter Based Fusion of Panchromatic and Multispectral Image to Improve Spectral Quality" carried out by Mr. Kirankumar.A (1SG14SCS07), a bonafide student of Sapthagiri College of Engineering, Bangalore in partial fulfillment for the award of Master of Technology in Computer Science & Engineering of the Visvesvaraya Technological University, Belgaum during the year 2015-2016. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work (14SCS44) prescribed for the said degree.

  
30/11/16

Signature of the Guide

Mrs. Ancy Thomas  
Assistant Professor

  
30/11/16

Signature of the HOD

Dr. C.M. Prashanth  
Professor & H.O.D



Signature of the Principal

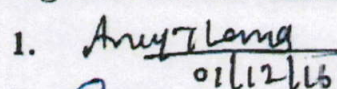
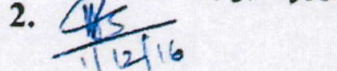
Dr. Aswatha Kumar M  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore - 560 057

### External viva

Name of the Examiners

1. Ancy Thomas
2. B. Gayathri. Kamath

Signature of the Examiners with date

1.   
01/12/16
2.   
11/12/16

  
Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore- 560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

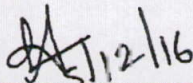
14/5, Chikkasandra, Hesarghatta Main Road, Bangalore-560057

Department Of Computer Science and Engineering



## CERTIFICATE

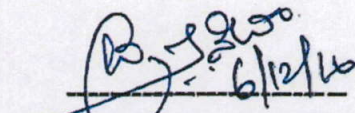
Certified that the project work entitled "IMPROVED NEWS RECOMMENDATION SYSTEM USING HYBRID USER MODELLING TECHNIQUE" carried out by Mrs. C.NADHIYA (1SG14SCS03), a bonafide student of Sapthagiri college of engineering, Bangalore in the partial fulfillment for the award of Master of Technology in Computer Science & Engineering of the Visvesvaraya Technological University, Belgaum during the year 2015-2016. It is certified that all corrections/suggestions indicated in the report. The Project report has been approved as it satisfies the academic requirements in respect of project work (14SCS44) prescribed for the said degree.

 5/12/16

Signature of the Guide

Mrs. A. Latha

Assistant Professor

 6/12/16

Signature of the HOD

Dr. C.M. Prashanth

Professor & HOD



Signature of the Principal

Dr. M. Aswatha Kumar

Principal

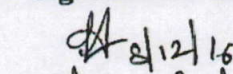
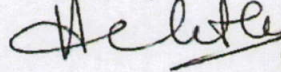
Dr. Aswatha Kumar M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore - 560 057


### External viva

Name of the examiners

1. Latha
2. Hemalatha K.L

Signature of the examiners with date

 8/12/16  
 8/12/16

  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesarghatta Road,  
Bangalore - 560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

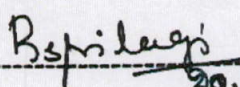
14/5, Chikkasandra, Hesaraghatta Main Road,  
Bangalore-560057

(Affiliated to Visvesvaraya Technological University, Belgaum, Karnataka)  
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

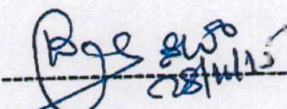


## CERTIFICATE


Certified that the internship work entitled "A Software Tool Based on Sox For Edit and Delete Operation on Modules" carried out by KRITHIKA M V (1SG14SCS08), a bonafide student of Sapthagiri College of Engineering, Bangalore, in partial fulfillment for the award of III semester, Master of Technology in Computer Science and Engineering of Visvesvaraya Technological University, Belgaum during the academic year 2015-2016. It is certified that all the corrections/suggestions have been incorporated in the report deposited in the departmental library. The internship report has been approved as it satisfies the academic requirements in respect to viva voce on internship report (14SCS33) prescribed for the said degree.

  
Signature of the Guide

Prof. Rajeev Bilagi  
Associate Professor

  
Signature

Dr. C.M. Prashanth

  
Signature

Dr. M. Aswatha Kumar

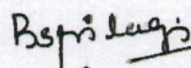
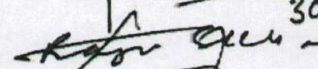
Professor & H.O.D. Department  
Computer Science Engineering  
Sapthagiri College of Engineering  
Bangalore-57  
Principal  
Dr. Aswatha Kumar M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore - 560 057.

### External viva

Name of the examiners

1. Bajew. Pri Lagi
2. RAJASEKARAN

Signature of the examiners with date

1.  30.11.15
2.  30.11.15

  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road  
Bangalore- 560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

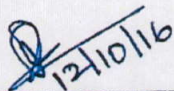
14/5, Chikkasandra, Hesarghatta Main Road, Bangalore-560057  
(Affiliated to Visvesvaraya Technological University, Belgaum, Karnataka.)

Department Of Computer Science and Engineering



## CERTIFICATE

Certified that the project work entitled "A context aware rules recommendations system for similar users" carried out by Mrs. Pushpa L (1SG14SCS12), a bonafide student of Sapthagiri college of engineering, Bangalore in the partial fulfillment for the award of Master of Technology in Computer Science & Engineering of the Visvesvaraya Technological University, Belgaum during the year 2015-2016. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The Project report has been approved as it satisfies the academic requirements with respect to the project work (14SCS44) prescribed for the said degree.

  
12/10/16

**Signature of the Guide**

Mrs. Ragini Krishna  
Assistant Professor

  
12/10/16

**Signature of the HOD**

Dr. C.M. Prashanth  
Professor & HOD

  
12/10/16

**Signature of the Principal**

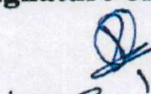
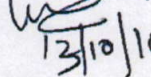
Dr. M. Aswatha Kumar  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057

### External viva

**Name of the examiners**

1. Ragini Krishna
2. Varalakshmi

**Signature of the examiners with date**

  
12/10/16  
  
13/10/16

  
Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

BENGALURU-560057

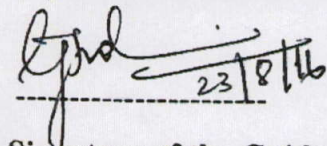
(Affiliated to Visvesvaraya Technological University, Belgaum, Karnataka)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING



## CERTIFICATE

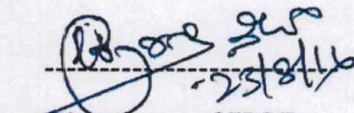
Certified that the dissertation work entitled "MINING USER OPINIONS ON DIFFERENT PRODUCT ASPECTS FROM ONLINE PRODUCT REVIEWS" carried out by ANKITHA SARIKA SINGH (1SG14SCS01), a bonafide student of Sapthagiri College of Engineering, Bangalore, in partial fulfillment for the award of Master of Technology in Computer Science and Engineering of Visvesvaraya Technological University, Belgaum during the academic year 2015-2016. It is certified that all the corrections/suggestions have been incorporated in the dissertation deposited in the departmental library. The dissertation report[14SCS44] has been approved as it satisfies the academic requirements in respect of dissertation work prescribed for the said degree.

  
23/8/16

Signature of the Guide

Prof. Poornima G J

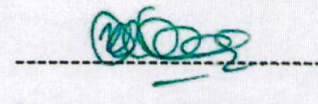
Assistant Professor

  
23/8/16

Signature of HOD

Dr. C.M. Prashanth

Professor & H.O.D

  
23/8/16

Signature of Principal

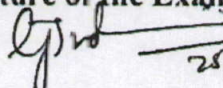
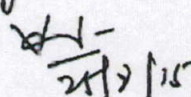
Dr. M. Aswatha Kumar  
Dr. Aswatha Kumar. M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057

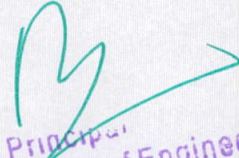
### External viva

Name of the examiners

1. Poornima G.J
2. Prof. Vrinda Sletty

Signature of the Examiners with date

1.  23/8/16.
2.  24/8/15

  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

14/5, Chikkasandra, Hesarghatta Main Road, Bangalore-560057  
(Affiliated to Visvesvaraya Technological University, Belgaum, Karnataka.)

Department Of Computer Science and Engineering



## CERTIFICATE

Certified that the project work entitled "A context aware rules recommendations system for similar users" carried out by Mrs. Pushpa L (1SG14SCS12), a bonafide student of Sapthagiri college of engineering, Bangalore in the partial fulfillment for the award of Master of Technology in Computer Science & Engineering of the Visvesvaraya Technological University, Belgaum during the year 2015-2016. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The Project report has been approved as it satisfies the academic requirements with respect to the project work (14SCS44) prescribed for the said degree.

Signature of the Guide

Mrs. Ragini Krishna  
Assistant Professor

External viva

Name of the examiners

1. Ragini Krishna
2. Varalakshmi

Signature of the HOD

Dr. C.M. Prashanth  
Professor & HOD

Signature of the Principal

Dr. M. Aswatha Kumar, M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057

Signature of the examiners with date

  
18/10/16  
13/10/16

Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

14/5, Chikkasandra, Hesarghatta Main Road, Bangalore-560057

Department Of Computer Science and Engineering



## CERTIFICATE

Certified that the project work entitled "**High Coherent Association Rule Mining Using Propositional Logic**" carried out by Mrs. GEETHA G (1SG14SCS05), a bonafide student of Sapthagiri college of engineering, Bangalore in the partial fulfillment for the award of Master of Technology in Computer Science & Engineering of the Visvesvaraya Technological University, Belgaum during the year 2015-2016. It is certified that all corrections/suggestions indicated in the report. The Project report has been approved as it satisfies the academic requirements in respect of project work (14SCS44) prescribed for the said degree.

Signature of the Guide

Ms. Veena K.R

Assistant Professor

Signature of the HOD

Dr.C.M.Prashanth

Professor & HOD

Signature of the Principal

Dr. M. Aswatha Kumar. M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057

### External viva

Name of the examiners

1. Naidila Sadashiv
- 2.

Signature of the examiners with date

  
07/09/2016  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

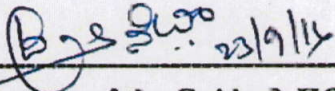
14/5, Chikkasandra, Hesarghatta Main Road, Bangalore-560057


Department Of Computer Science and Engineering



## CERTIFICATE

Certified that the project work entitled "Entity Resolution in The Unstructured Data Streams" carried out by Ms. POORNIMA NAMBIAR (1SG14SCS11), a bonafide student of Sapthagiri College of Engineering, Bangalore in the partial fulfillment for the award of Master of Technology in Computer Science & Engineering of the Visvesvaraya Technological University, Belgaum during the year 2015-2016. It is certified that all corrections/suggestions indicated in the report. The Project report has been approved as it satisfies the academic requirements in respect of project work (14SCS44) prescribed for the said degree.

  
Signature of the Guide & HOD  
Dr. C.M. Prashanth  
Professor & HOD


  
Signature of the Principal  
Dr. Aswatha Kumar, M  
Dr. M. Aswatha Kumar  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesarghatta Main Road,  
Bangalore-560 057

### External viva

Name of the examiners

- 1.
- 2.

Signature of the examiners with date

  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesarghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

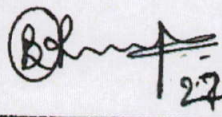
14/5, Chikkasandra, Hesarghatta Main Road, Bangalore-560057

Department Of Computer Science and Engineering




## CERTIFICATE

Certified that the project work entitled "Detection of Wormhole Attack using T-AOMDV Protocol" carried out by Ms. SEEMA B.P. (1SG14SCS14), a bonafide student of Sapthagiri College of Engineering, Bangalore in the partial fulfillment for the award of Master of Technology in Computer Science & Engineering of the Visvesvaraya Technological University, Belgaum during the year 2015-2016. It is certified that all corrections/suggestions indicated in the report. The Project report has been approved as it satisfies the academic requirements in respect of project work (14SCS44) prescribed for the said degree.

  
22/4/17

Signature of the Guide

Mrs. Roopa Banakar  
Assistant Professor

  
22/4/17

Signature of the HOD

Dr.C.M.Prashanth  
Professor & HOD



Signature of the Principal

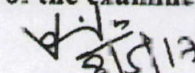

Dr. M. Aswatha Kumar, M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore - 560 057.

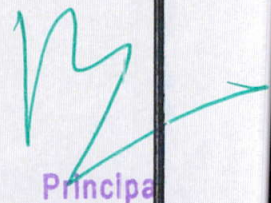
### External viva

Name of the examiners

1. Dr. Veerinda Shetty
2. Roopa Banakar

Signature of the examiners with date

  
2/5/17  
  
8/5/17



Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesarghatta Rd  
Bangalore - 560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

BENGALURU-560057

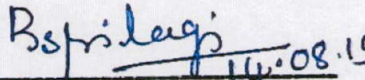
(Affiliated to Visvesvaraya Technological University, Belgaum, Karnataka)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING



## CERTIFICATE

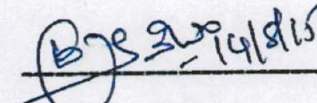
Certified that the dissertation work entitled "AN EFFICIENT MECHANISM TO DETECT AND REDUCE DDOS FLOODING ATTACKS" carried out by VIKAS B O (1SG13SCS17), a bonafide student of Sapthagiri College of Engineering, Bengaluru, in partial fulfillment for the award of Master of Technology in Computer science and Engineering of Visvesvaraya Technological University, Belgaum during the academic year 2014-2015. It is certified that all the corrections/suggestions have been incorporated in the dissertation deposited in the department library; the dissertation report has been approved as it satisfies the academic requirements in respect of dissertation work prescribed for the said degree.

  
14.08.15

Signature of the Guide

**Mr. Rajeev Bilagi**

Associate Professor

  
14/8/15

Signature of HOD

**Dr. C.M. Prashanth**

Professor & H.O.D



Signature of Principal

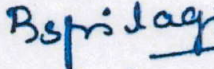
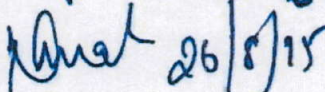
**Dr. M. Aswatha Kumar**  
**Dr. Aswatha Kumar. M**  
Principal Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore - 560 057.

### External Viva

Name of the Examiners

1. Bajeev. Bilagi
2. Nimmala Hiremani

Signature of the Examiners with date

  
28.8.2015  
  
26/8/15

  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore - 560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

BENGALURU-560057

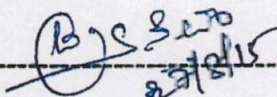
(Affiliated to Visvesvaraya Technological University, Belgaum, Karnataka)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING



## CERTIFICATE

Certified that the dissertation work entitled "**Hybrid Classifier for Data Leakage Prevention**" carried out by **VEENA V (1SG13SCS13)**, a bonafide student of **Sapthagiri College of Engineering, Bengaluru**, in partial fulfillment for the award of **Master of Technology in Computer Science and Engineering** of **Visvesvaraya Technological University, Belgaum** during the academic year **2014-2015**. It is certified that all the corrections/suggestions have been incorporated in the dissertation deposited in the department library. The dissertation report has been approved as it satisfies the academic requirements in respect of dissertation work prescribed for the said degree.



Signature of the Guide

**Dr. C. M Prashanth**

**Professor & HOD**



Signature of Principal

**Dr. Aswatha Kumar M**

**Dr. Aswatha Kumar. M**

Principal

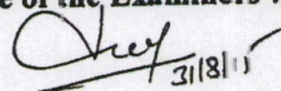
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore - 560 057.

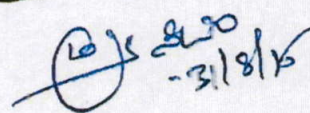
### External Viva

Name of the Examiners

1. Dr. Mohan H. G.
2. Dr. Prashanth CM.

Signature of the Examiners with date

  
31/8/15

  
31/8/15

  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore - 560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

14/5, Chikkasandra, Hesaraghatta Main Road

Bangalore-560057


(Affiliated to Visvesvaraya Technological University, Belgaum, Karnataka)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING



## CERTIFICATE

Certified that the dissertation work entitled "An Efficient Route Discovery Mechanism in Wireless Sensor Network" carried out by NANDINI M (1SG12SCS08), a bonafide student of Sapthagiri College of Engineering, Bangalore, in partial fulfillment for the award of Master of Technology in Computer Science and Engineering of Visvesvaraya Technological University, Belgaum during the academic year 2014-2015. It is certified that all the corrections/suggestions have been incorporated in the dissertation deposited in the department library. The dissertation report has been approved as it satisfies the academic requirements in respect of dissertation work prescribed for the said degree.

  
Signature of the Guide

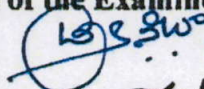

Dr. C. M. Prashanth  
Professor and HOD


### External Viva

Name of the Examiner

1. Dr. Prashanth C M
2. Ziaur-Rahman

Signature of the Examiner with date


 10/10/15  
 10/10/2015

  
Signature

Dr. Aswatha Kumar M

Principal

Dr. Aswatha Kumar M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore -560 057.

  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

BENGALURU-560057

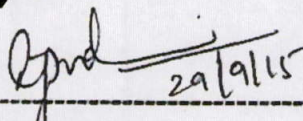
(Affiliated to Visvesvaraya Technological University, Belgavi, Karnataka)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

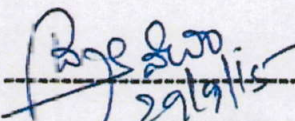


## CERTIFICATE


Certified that the dissertation work entitled "AN ENERGY EFFICIENT DATA TRANSFER MECHANISM IN WIRELESS SENSOR NETWORKS" carried out by KAVYA RAMAKRISHNA (1SG13SCS15), a bonafide student of Sapthagiri College of Engineering, Bengaluru, in partial fulfillment for the award of Master of Technology in Computer science and Engineering of Visvesvaraya Technological University, Belgavi during the academic year 2014-2015. It is certified that all the corrections/suggestions have been incorporated in the dissertation deposited in the department library; the dissertation report has been approved as it satisfies the academic requirements in respect of dissertation work prescribed for the said degree.

  
Signature of the Guide

Mrs. Poornima G J  
Assistant Professor

  
Signature of HOD

Dr. C.M. Prashanth  
Professor & H.O.D

  
Signature of Principal

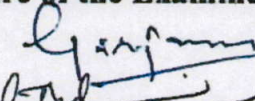
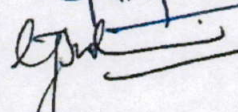
Dr. M. Aswatha Kumar  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore - 560 057.


### External Viva

Name of the Examiners

1. Dr. GIRIJANNA H. A.
2. Poornima. E. J

Signature of the Examiners with date

 11/10/2015  
 11/10/15

  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore - 560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

BENGALURU-560057

(Affiliated to Visvesvaraya Technological University, Belgaum, Karnataka)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING



## CERTIFICATE

Certified that the dissertation work entitled "Hybrid Classifier for Data Leakage Prevention" carried out by VEENA V (1SG13SCS13), a bonafide student of Sapthagiri College of Engineering, Bengaluru, in partial fulfillment for the award of Master of Technology in Computer Science and Engineering of Visvesvaraya Technological University, Belgaum during the academic year 2014-2015. It is certified that all the corrections/suggestions have been incorporated in the dissertation deposited in the department library. The dissertation report has been approved as it satisfies the academic requirements in respect of dissertation work prescribed for the said degree.

Signature of the Guide

Dr. C. M Prashanth

Professor & HOD

Signature of Principal

Dr. Aswatha Kumar M

Principal  
Dr. Aswatha Kumar M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore - 560 057.

### External Viva

Name of the Examiners

1. Dr. MOHAN K-G.
2. Dr. Prashanth CM.

Signature of the Examiners with date

Very  
31/8/15

Dr. Prashanth CM  
31/8/15

Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

BENGALURU-560057

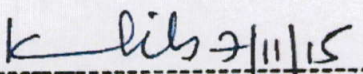
(Affiliated to Visvesvaraya Technological University, Belgaum, Karnataka)

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

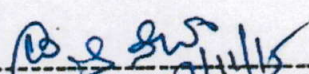


### CERTIFICATE


Certified that the dissertation work entitled "Preserving Privacy For Group Matching In Social Networks" carried out by SHALINI D(1SG13SCS09), a bonafide student of Sapthagiri college of engineering, bengaluru, in partial fulfillment for the award of Master of Technology in Computer science and Engineering of Visvesvaraya Technological University, Belgaum during the academic year 2014-2015. It is certified that all the corrections/suggestions have been incorporated in the dissertation deposited in the department library. The dissertation report has been approved as it satisfies the academic requirements in respect of dissertation work prescribed for the said degree.

  
Signature of the Guide

Mrs. Kamalakshi Naganna  
Associate Professor

  
Signature of HOD

Dr. C.M. Prashanth  
Professor & H.O.D

  
Signature of Principal

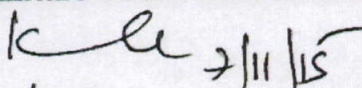

Dr. Aswath Kumar M  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesarghatta Main Road,  
Bangalore - 560 057.


#### External Viva

Name of the Examiners

1. Kamalakshi Naganna
2. Varinda Shetty

Signature of the Examiners with date

1.  2/11/15
2.  2/11/15

  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesarghatta Road,  
Bangalore - 560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

BENGALURU-560057

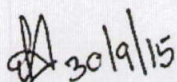
(Affiliated to Visvesvaraya Technological University, Belgaum, Karnataka)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING



## CERTIFICATE

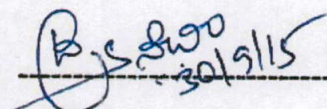
Certified that the dissertation work entitled "INTEREST BASED INTERACTIVITY THROUGH CROSS PLATFORM IN BIG DATA" carried out by SRIKANTHAGOWDA R (1SG13SCS12), a bonafide student of Sapthagiri College of Engineering, Bengaluru, in partial fulfillment for the award of Master of Technology in Computer science and Engineering of Visvesvaraya Technological University, Belgaum during the academic year 2014-2015. It is certified that all the corrections/suggestions have been incorporated in the dissertation deposited in the department library. The dissertation report has been approved as it satisfies the academic requirements in respect of dissertation work prescribed for the said degree.

 30/9/15

Signature of the Guide

Mrs. Latha A

Assistant Professor

 30/9/15

Signature of HOD

Dr. C.M. Prashanth

Professor & H.O.D



Signature of Principal

Dr. Aswatha Kumar M

Principal

Dr. Aswatha Kumar M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore - 560 057.

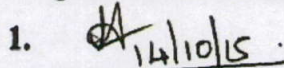
### External Viva

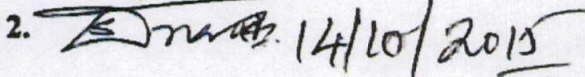
Name of the Examiners

1. A. Latha

2. Dr. S. R. Nayak

Signature of the Examiners with date

1.  14/10/15

2.  14/10/2015

  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore- 560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

BENGALURU-560057

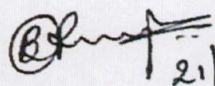
(Affiliated to Visvesvaraya Technological University, Belagavi, Karnataka)

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING



### CERTIFICATE

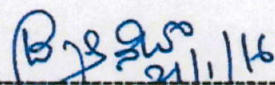
Certified that the dissertation work entitled "AN EFFICIENT ANONYMOUS SECURE ROUTING PROTOCOL FOR MANETS" carried out by WAHIDUL HASSAN (ISG13SCS18), a bonafide student of Sapthagiri College of Engineering, Bengaluru, in partial fulfillment for the award of Master of Technology in Computer science and Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2014-2015. It is certified that all the corrections/suggestions have been incorporated in the dissertation deposited in the department library. the dissertation report has been approved as it satisfies the academic requirements in respect of dissertation work prescribed for the said degree.

  
21/1/16

Signature of the Guide

Mrs. Roopa Banakar

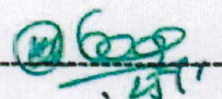
Assistant Professor

  
21/1/16

Signature of HOD

Dr. C.M. Prashanth

Professor & H.O.D

  
21/1/16

Signature of Principal

Dr. Aswatha Kumar M

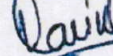
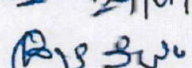
Principal

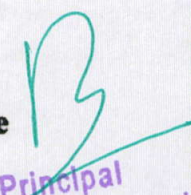
#### External Viva

Name of the Examiners

1. VANI K.S.
2. Dr. Prashanth CM

Signature of the Examiners with date

1.  29/01/2016
2.  29/01/2016

  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

BENGALURU-560057

(Affiliated to Visvesvaraya Technological University, Belgaum, Karnataka)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING



## CERTIFICATE

Certified that the dissertation work entitled "AN ENHANCED SECURITY AND HIGH THROUGHPUT FOR MULTICAST ROUTING IN WIRELESS MESH NETWORK" carried out by SOWMYA SOMANATH (1SG13SCS11), a bonafide student of Sapthagiri college of engineering, bengaluru, in partial fulfillment for the award of Master of Technology in Computer science and Engineering of Visvesvaraya Technological University, Belgaum during the academic year 2014-2015. It is certified that all the corrections/suggestions have been incorporated in the dissertation deposited in the department library. The dissertation report has been approved as it satisfies the academic requirements in respect of dissertation work prescribed for the said degree.

*Gadad*  
18/9/15

Signature of the Guide

Mrs. Veena Gadad

Asst. Professor

*Prashanth*  
18/9/15

Signature of HOD

Dr. C.M. Prashanth

Professor & H.O.D

*Aswatha Kumar*

Signature of Principal

Dr. Aswatha Kumar .M

Principal

### External Viva

Name of the Examiners

1. Nirmala Hiremantri

Signature of the Examiners with date

*Nirmala* 18/9/15

*B*  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road  
Bangalore- 560 051



**SAPTHAGIRI COLLEGE OF ENGINEERING**  
14/5, Chikkasandra, Hesarghatta Main Road, Bangalore-560057

**DEPARTMENT OF ELECTRONICS AND COMMUNICATION  
ENGINEERING**



## **CERTIFICATE**

This is to certify that **VEENA.K.N.(1SG16LVS04)**, a bonafide student of Sapthagiri College of Engineering, has satisfactorily completed Project work entitled, **“Design and analysis of ECG Signal filtering using haar wavelets for arrhythmias detection on FPGA ”**, in partial fulfillment of the requirements as prescribed by the VTU for IV semester, Master of Technology in VLSI Design & Embedded Systems during the academic year 2017 – 18. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the department library.

Signature of the Guide  
Mrs. Shobha.S  
Associate Professor  
Dept of ECE

Signature of H O D

Mrs. Sandhya Rani M H

Associate Professor

Dept of ECE

Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesarghatta Road  
Bangalore - 560 057  
SCE, Bangalore

Name of the Examiners

1. K. Ezhilaseelan

2. S. Shobha

Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesarghatta Road,  
Bangalore-560 057

Signature



**SAPTHAGIRI COLLEGE OF ENGINEERING**  
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057  
**DEPARTMENT OF ELECTRONICS AND COMMUNICATION**  
**ENGINEERING**



**CERTIFICATE**

This is to certify that **MEGHA HEGDE (1SG16LVS03)**, a bonafide student of Sapthagiri College of Engineering, has satisfactorily completed the Project work entitled "**Development and Implementation of Gabor Filter in Medical Imaging**", in partial fulfillment of the requirements as prescribed by the **Visvesvaraya Technological University** for IV semester, Master of Technology in **VLSI Design & Embedded Systems** during the year 2017-18. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the department library.

Signature of the Guide

**Mrs. Agalya Sivakumar P**

Associate Professor

Dept of ECE, SCE

Signature of HOD

**Mrs. Sandhya Rani M H**

Associate Professor & HOD

Dept of ECE, SCE

Signature of Principal

**Dr. K L Shivabasappa**

Principal

SCE, Bengaluru

**EXTERNAL VIVA**

Name of the Examiners

1] **F. Agalya**

2] **P. Bhunaserwan**

Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore- 560 057

Signature



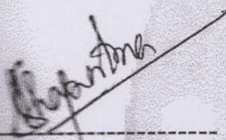
**SAPTHAGIRI COLLEGE OF ENGINEERING**  
14/5, Chikkasandra, Hesarghatta Main Road, Bengaluru-560057

**DEPARTMENT OF ELECTRONICS AND COMMUNICATION  
ENGINEERING**

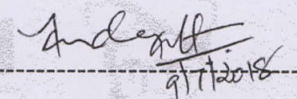


**CERTIFICATE**

This is to certify that **MAHANTESH R.S. (1SG16LVS02)**, a bonafide student of **Sapthagiri College of Engineering**, has satisfactorily completed Project work entitled, "**Design and Implementation of light weight Block ciphers PRESENT and HIGHT Algorithms on FPGA**", in partial fulfillment of the requirements as prescribed by the **VTU for IV semester, Master of Technology in VLSI Design & Embedded Systems** during the academic year **2017 – 18**. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the department library.

  
-----

Signature of the Guide  
**Dr. Sasmita Mohapatra**  
Associate Professor  
Dept of ECE

  
-----

Signature of H.O.D  
**Mrs. Sandhya Rani M H**  
Head of the Department  
Electronics & Communication  
Sapthagiri College of Engineering  
Bangalore - 560 057  
Dept of ECE

  
-----

Signature of the Principal  
**Dr. K. L. Shivabharappa**  
Sapthagiri College of Engineering  
Chikkasandra, Hesarghatta Road  
Bangalore - 560 057  
Principal  
SCE, Bengaluru

Name of the Examiners

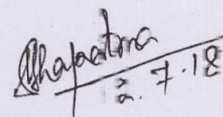
1. **Dr. Sasmita Mohapatra**

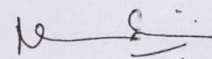
2. **Nandini K.S**



Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesarghatta Road,  
Bangalore- 560 057

Signature

  
2.7.18





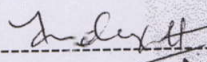
**SAPTHAGIRI COLLEGE OF ENGINEERING**  
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

**DEPARTMENT OF ELECTRONICS AND COMMUNICATION  
ENGINEERING**

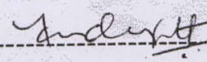



## **CERTIFICATE**

This is to certify that **KOKILA.B.PADEPPAGOL (1SG16LVS01)** has satisfactorily Completed the Project work entitled **“Design and Implementation of Stego Image Encoding and Decoding System using Lifting based Wavelet and Adaptive LSB Method on FPGA”**, in partial fulfillment of the requirements as prescribed by the **Visveswaraya Technological University** for **IV semester, Master of Technology in VLSI Design & Embedded Systems** during the year 2017 – 18. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the department library.

  
Signature of the Guide

Mrs. Sandhya Rani M H  
Associate Professor & HOD  
Dept. of ECE

  
Signature of H O D  
10/08/2018  
Mrs. Sandhya Rani M H  
Associate Professor & HOD  
Dept. of ECE

  
Signature of Principal  
Dr. K L Shivabasappa  
Principal  
SCE, Bangalore

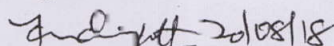
Head of the Department  
Electronics & Communication  
Sapthagiri College of Engineering  
Bangalore- 560 057  
External viva

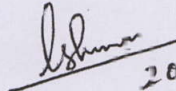
Name of the Examiners

1. Sandhya Rani M.H.

2. Dr. ASHA C. N.  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore- 560 057

Signature

  
20/08/18

  
20/8/18



# SAPTHAGIRI COLLEGE OF ENGINEERING

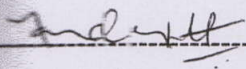
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

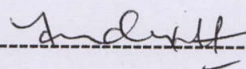
## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING




### CERTIFICATE

This is to certify that **GANGADHARA SWAMY M S (1SG13LVS02)** has satisfactorily completed the Project work entitled "**Implementation of Hand Sign Interpreter Using Embedded Processor**" in partial fulfillment of the requirements as prescribed by the **Visveswaraya Technological University** for IV semester, Master of Technology in VLSI Design and Embedded Systems during the year 2016-17. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the department library.

  
Signature of the Guide  
**Mrs. Sandhya Rani M H**  
Associate Professor & HOD  
Dept of ECE, SCE

  
Signature of HOD  
**Mrs. Sandhya Rani M H**  
Associate Professor & HOD  
Head of the Department  
Dept of ECE, SCE  
Sapthagiri College of Engineering  
Bangalore-560 057.  
External Viva

  
Signature of the Principal  
**Dr. Aswatha Kumar M**  
Principal  
Sapthagiri College of Engineering  
14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057

Name of the Examiner

1.

2.

Signature



Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

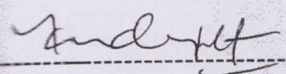
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

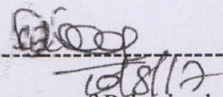


## CERTIFICATE

This is to certify that **Ms. HEMA N (1SG15LVS02)** has satisfactorily completed the Project work entitled "**Implementation of Human Countenance and Audience Analytics on a Digital Signage System**", in partial fulfillment of the requirements as prescribed by the **Visvesvaraya Technological University** for IV semester, **Master of Technology in VLSI Design & Embedded Systems** during the year 2016-17. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the department library.

  
Signature of the Guide  
**Mrs. Sandhya Rani M H**  
Associate Professor & HOD  
Dept of ECE

  
Signature of HOD  
**Mrs. Sandhya Rani M H**  
Head of the Department  
Associate Professor & HOD  
Sapthagiri College of Engineering  
Dept of ECE  
Bangalore - 560 057.

  
Signature of Principal  
**Dr. Aswatha Kumar M**  
Principal


SCE, Bengaluru  
**Dr. Aswatha Kumar. M**  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057

Name of the Examiners

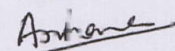
1) **ARCHANA.H.R**

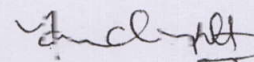
2) **Sandhya Rani M.H.**

External Viva

  
Principal

**Sapthagiri College of Engineering**  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057

  
Signature

  
Signature



# SAPTHAGIRI COLLEGE OF ENGINEERING


14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

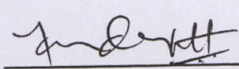
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING




## CERTIFICATE

This is to certify that Mr. SHARATH RAJ R, USN:1SG12LVS11 has satisfactorily completed the Project work entitled "Design and Analysis of Alias Locked Loop Components in ~~an~~ Technology" in partial fulfillment of the requirements as prescribed by the Visvesvaraya Technological University for 4<sup>th</sup> semester M. Tech. in VLSI Design and Embedded System during the year 2016-2017. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library.

  
Name & Signature of Guide  
Prof. AGALYAP  
Associate Professor  
Dept. of ECE

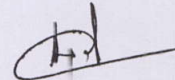
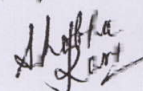
  
Name & Signature of HOD  
Prof. SANDHYA RANI M H.  
Associate Professor & HOD,  
Dept. of ECE

  
Name & Signature of Principal  
Dr. Aswatha Kumar M  
Professor & Principal  
SCE, Bengaluru

Name of the Examiners

1. P. Agalya
2. Dr. A. SHOBHA RANI

Signatures

Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore- 560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



### CERTIFICATE

This is to certify that VANRAMMAWIA (1SG15LVS09) has satisfactorily completed the Project work entitled "ECG Acquisition System With Lower DC Offset: An Architectural Model", in partial fulfillment of the requirements as prescribed by the VTU for IV semester, Master of Technology in VLSI DESIGN & EMBEDDED SYSTEMS during the year 2016-17. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the department library.

Signature of the Guide

Mrs. Shobha Hugar

Assistant Professor

Dept of ECE

Signature of HOD

Mrs. Sandhya Rani M H

Associate Professor & HOD

Dept of ECE

Signature of Principal

Dr. Aswatha Kumar M.  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Hesaraghatta Main Road,  
Bangalore-560057  
SCE, Bengaluru

### External Viva

Name of Examiners

1. K.P. NAGAPRASHA

2. SHOBHA HUGAR

Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560057

Signature With Date

Nagaprasha 21/09/17

Shobha 21/9/17



# SAPTHAGIRI COLLEGE OF ENGINEERING

14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



### CERTIFICATE

This is to certify that **PRIYA N. (1SG15LVS07)** has satisfactorily completed the Interim evaluation of Project work entitled "**An Efficient Digital Baseband Encoder for Short Range Wireless Communication Applications**", in partial fulfillment of the requirements as prescribed by the VTU for IV semester, Master of Technology in VLSI DESIGN & EMBEDDED SYSTEMS during the year 2016-17. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the department library.

*Mohapatra*  
5.10.17

Signature of the Guide

Mrs. Sasmita Mohapatra

Associate Professor

Dept. of ECE

*Sandhya Rani M H*  
05/10/2017

Signature of HOD

Mrs. Sandhya Rani M H

Associate Professor & HOD

Dept. of ECE

*Aswatha Kumar M*

Signature of Principal

Dr. Aswatha Kumar M

Principal

SCE, Bengaluru

External Viva

Name of the Examiner

1. P. Shanthi

2. Dr. Sasmita Mohapatra

*B*

Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore- 560 057

Signature

*Dr. H. G. 6/10/17*

*Mohapatra*  
6.10.17



# SAPTHAGIRI COLLEGE OF ENGINEERING

14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



### CERTIFICATE

This is to certify that **MRINALINI B L (1SG15LVS05)** has satisfactorily completed the Project work entitled "**Design and Implementation of Low Cost Efficient Beckons using Wireless Sensor Network for the Digital Signage System**", in partial fulfillment of the requirements as prescribed by the **Visveswaraya Technological University** for **IV semester, Master of Technology** in **VLSI Design and Embedded Systems** during the year **2016-17**. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the department library.

Signature of the Guide

**Mrs. P. Agalya Sivakumar**

Associate Professor

Dept. of ECE

Signature of HOD

**Mrs. Sandhya Rani M H**

Associate Professor & HOD

Dept of ECE

Signature of the Principal

**Dr. Aswatha Kumar M**

Dr. Aswatha Kumar. M

Principal

Sapthagiri College of Engineering

No. 14/5, Chikkasandra,

Hesaraghatta Main Road,

Bangalore-560 057

### External Viva

Name of the Examiners

1.

**SHAIKESHA M-L**

2.

**P. Agalya**

Principal

Sapthagiri College of Engineering

Chikkasandra, Hesaraghatta Road,

Bangalore-560 057

Signature

01.09.2017



# SAPTHAGIRI COLLEGE OF ENGINEERING

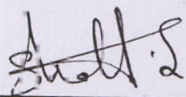
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

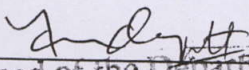
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

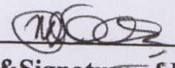


## CERTIFICATE

This is to certify that **Ms. SUSHMA S.**, USN 1SG14LVS21 has satisfactorily completed the Project work entitled **"DESIGN AND IMPLIMENTATION OF MICRO-PROGRAMMED FIR FILTER USING EFFICIENT MULTIPLIERS ON FPGA"** in partial fulfillment of the requirements as prescribed by the Visvesvaraya Technological University for 4<sup>th</sup> semester M. Tech. in VLSI Design and Embedded System during the year 2015-2016. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library.

  
Name & Signature of Guide  
**Prof. SHOBHA S.**  
Associate Professor  
Dept. of ECE

  
Name & Signature of HOD  
**Prof. SANDHYA RANI M.H.**  
Associate Professor & HOD,  
Dept. of ECE, 560 057.

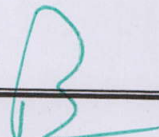
  
Name & Signature of Principal  
**Dr. Aswatha Kumar**  
Professor & Principal  
SCE, Bengaluru  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057

Name of the Examiners

Signatures

1. **LATHA B. N.**
2. **S. SHOBHA**

**Latha B. N. 04/08/16**  
**Shobha S. 04/8/16**

  
Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore- 560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

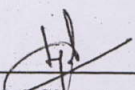
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

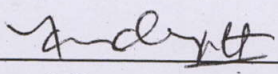
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

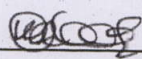


## CERTIFICATE

This is to certify that Ms. SMITHA M. R., USN 1SG14LVS20 has satisfactorily completed the Project work entitled “Design of Finite State Machine and VHDL Implementation of ARINC 717 and ARINC 429 Ip Cores and Integration of Ip Cores” in partial fulfillment of the requirements as prescribed by the Visvesvaraya Technological University for 4<sup>th</sup> semester M. Tech. in VLSI Design and Embedded System during the year 2015-2016. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library.

  
Name & Signature of Guide  
Prof. Agalya P.  
Associate Professor  
Dept of ECE, SCE

  
Name & Signature of HOD  
Prof. SANDHYA RANI M. H.  
Associate Professor & HOD,  
Dept. of ECE

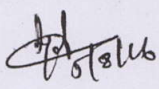
  
Name & Signature of Principal  
Dr. Aswatha Kumar M.  
Principal  
SCE, Bengaluru

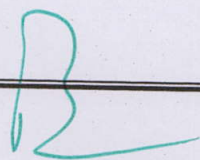
Name of the Examiners

External Viva

Signatures

1. P. Agalya
2. SIDDHANTH M. B.

  
Siddhant 5/3/2016

  
Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore- 560 057



## SAPTHAGIRI COLLEGE OF ENGINEERING


14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

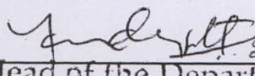
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

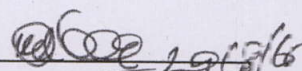


### CERTIFICATE

This is to certify that Ms. Shraddha Kallappa Walikar, USN 1SG14LVS19 has satisfactorily completed the Project work entitled "Real-Time Pedestrian Detection Algorithm for Traffic-Signal-Control System" in partial fulfillment of the requirements as prescribed by the Visvesvaraya Technological University for 4<sup>th</sup> semester M. Tech. in VLSI Design and Embedded System during the year 2015-2016. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library.

  
Name & Signature of Guide  
Dr. Aswatha Kumar M  
Principal  
SCE, Bengaluru


  
Name & Signature of HOD  
Prof. Sandhya Rani M H  
Head of the Department  
Electronics & Communication Engineering  
Sapthagiri College of Engineering  
Bengaluru-560 057.

  
Name & Signature of Principal  
Dr. Aswatha Kumar M  
Principal  
SCE, Bengaluru  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057

Name of the Examiners

Signatures of the Examiners

Latha B.N.

  
Latha B.N. 30/12/16

Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bengaluru-560 057



## SAPTHAGIRI COLLEGE OF ENGINEERING

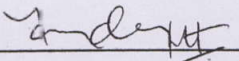
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

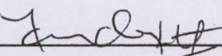


### CERTIFICATE


This is to certify that Mr. Sharath kumar H J, USN 1SG14LVS18 has satisfactorily completed the Project work entitled "Design and Implementation of PRESENT and LED Lightweight Ciphers and Deciphers on FPGA" in partial fulfillment of the requirements as prescribed by the Visvesvaraya Technological University for 4<sup>th</sup> semester M. Tech. in VLSI Design and Embedded Systems during the year 2015-2016. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library.

  
Name & Signature of Guide

Prof. Sandya Rani M H  
Associate Professor  
Dept. of ECE, SCE

  
Name & Signature of Head of the Department

Head of the Department  
Electronics & Communication Engineering  
Sapthagiri College of Engineering  
Dept. of ECE, SCE  
Bangalore - 560 057

  
Name & Signature of Principal

Dr. Aswatha Kumar M  
Principal  
SCE, Bengaluru


### External Viva


Name of the Examiners

1. Sandhya Rani M. H.

2. G R POORNIMA

Signature with Date

 06/08/2016

  
6/8/16

Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore- 560 057



## SAPTHAGIRI COLLEGE OF ENGINEERING

14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



### CERTIFICATE

This is to certify that Ms. PRIYANKA T N., USN 1SG14LVS17 has satisfactorily completed the Project work entitled "DESIGN AND IMPLEMENTATION OF PARALLEL DECISION TREE CLASSIFICATION ACCELERATOR ON FPGA" in partial fulfillment of the requirements as prescribed by the Visvesvaraya Technological University for 4<sup>th</sup> semester M. Tech. in VLSI Design and Embedded System during the year 2015-2016. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library.

Signature of Guide  
Mrs. Vani A.  
Assistant Professor  
Dept. of ECE

Signature of HOD  
Mrs. SANDHYA RANI M H.  
Associate Professor & HOD,  
Dept. of ECE

Signature of Principal  
Dr. Aswatha Kumar. M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057

### External Viva

Name of the Examiners

1. Shalidhara H. R.

2. [Signature]

Signature with Date

[Signature] 29/11/16

[Signature] 29/01

Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore- 560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

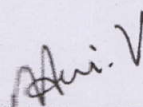
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

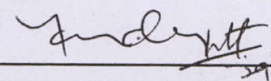
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

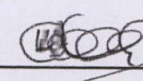


## CERTIFICATE

This is to certify that Ms. NITHYA M., USN 1SG14LVS15 has satisfactorily completed the Project work entitled "PERFORMANCE ANALYSIS OF FACE DETECTION USING VISUAL DESCRIPTORS AND CLASSIFIERS FOR A COLOR IMAGE" in partial fulfillment of the requirements as prescribed by the Visvesvaraya Technological University for 4<sup>th</sup> semester M. Tech. in VLSI Design and Embedded System during the year 2015-2016. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library.

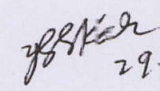
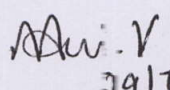
  
Name & Signature of Guide  
Prof. VANI V.  
Assistant Professor  
Dept. of ECE

  
Name & Signature of HOD  
Prof. SANDHYA RANI M H.  
Associate Professor & HOD  
Dept. of ECE

  
Name & Signature of Principal  
Dr. Aswatha Kumar  
Professor & Principal  
SCE, Bengaluru  
Dr. Aswatha Kumar. M  
Principal  
Sapthagiri College of Engineering  
No. 14/5 Chikkasandra,  
Hesaraghatta Main Road,  
Bengaluru-560 057

Name of the Examiners

1. Dr. Siva Yellampalli  
2. Vani. V

  
29-7-16  
  
29/7/2016

Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

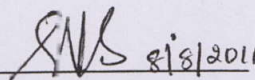
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

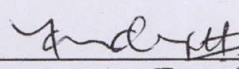
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING




## CERTIFICATE

This is to certify that Ms. NAZIA TARANNUM, USN 1SG14LVS14 has satisfactorily completed the Project work entitled "FEMUR SEGMENTATION AND LENGTH MEASUREMENT FROM FOETAL ULTRASOUND IMAGES BASED ON WATERSHED ALGORITHM WITH AND WITHOUT SMOOTHENING TECHNIQUE" in partial fulfillment of the requirements as prescribed by the Visvesvaraya Technological University for 4<sup>th</sup> semester M. Tech. in VLSI Design and Embedded System during the year 2015-2016. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library.

  
Signature of Guide  
Mrs. Sangeeta K. Siri  
Assistant Professor,  
Dept. of ECE

  
Head of the Department  
Mrs. Sandhya Ramineni  
Associate Professor & Head  
Dept. of ECE  
Sapthagiri College of Engineering  
Bengaluru - 560 057.

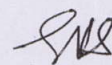
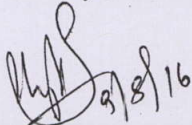
  
Signature of Principal  
Dr. Aswatha Kumar  
Professor & Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057

### External Viva

Name of the Examiners

Signatures

1. Sangeeta Siri  
2. Shylaja S.L

  
  
2/8/16.

Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,



## SAPTHAGIRI COLLEGE OF ENGINEERING


14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



### CERTIFICATE

This is to certify that **Mr. MANJUNATH ASKI**, USN 1SG14LVS13 has satisfactorily completed the Project work entitled "**Design and Implementation of E-health Smart Networked System Using IoT**" in partial fulfillment of the requirements as prescribed by the Visvesvaraya Technological University for 4<sup>th</sup> semester M. Tech. in VLSI Design and Embedded Systems during the year 2015-2016. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library.

  
29/8/16

Name & Signature of Guide  
**Prof. PRATHIBHA P.**  
Assistant Professor  
Dept. of ECE



Name & Signature of HOD  
**Prof. SANDHYA RANI M. H.**  
Head of the Department  
Electronics & Communication Engineering  
Sapthagiri College of Engineering  
Dept. of ECE, Bangalore-560 057.



Name & Signature of Principal  
**Dr. ASWATHA KUMAR M.**  
Professor & Principal


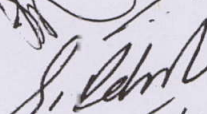
**SCE, Bengaluru**  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057

### External Viva

Name of the Examiners

1. **PRATHIBHA P.**
2. **ROHITH S**

Signatures with Date

 7/9  
 7/9

  
Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



## CERTIFICATE

This is to certify that **Mr. Madusudhan Patil M**, USN 1SG14LVS12 has satisfactorily completed the Project work entitled "**Analysis of NoC Adapter and Wormhole Router Design and its FPGA Implementation**" in partial fulfillment of the requirements as prescribed by the Visvesvaraya Technological University for 4<sup>th</sup> semester M. Tech. in VLSI Design and Embedded Systems during the year 2015-2016. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library.

Suma V Shetty

Indeeth

[Signature]

Name & Signature of Guide  
Prof. Suma V Shetty  
Assistant Professor  
Dept. of ECE, SCE

Name & Signature of HOD  
Prof. Sandhya Rani M H  
Associate Professor & HOD  
Dept. of ECE, SCE  
Bangalore-560 057

Name & Signature of Principal  
Dr. Aswatha Kumar M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057  
Signature with Date

### External Viva

Name of the Examiners

1. Nagendra Kumar M, SCE, C&P
2. Suma V Shetty, SCE, Blore

[Signature]  
2/8/16

Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



## SAPTHAGIRI COLLEGE OF ENGINEERING

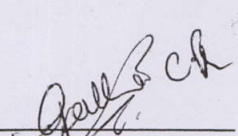
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

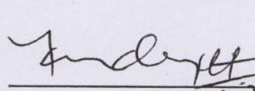
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

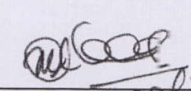


### CERTIFICATE

This is to certify that Ms. KAVYA K, USN 1SG14LVS11 has satisfactorily completed the Project work entitled "ACCIDENT DETECTION AND INTELLIGENT NAVIGATION SYSTEM FOR EMERGENCY VEHICLES IN URBAN AREAS USING IOT" in partial fulfillment of the requirements as prescribed by the Visvesvaraya Technological University for 4<sup>th</sup> semester M. Tech. in VLSI Design and Embedded System during the year 2015-2016. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library.

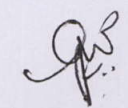
  
Name & Signature of Guide  
Dr. GEETHA C R  
Associate Professor  
Dept. of ECE

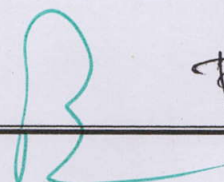
  
Name & Signature of HOD  
HOD: SANDHYA RANI M.H.  
Electronic Professor & HOD,  
Sapthagiri College  
Bangalore- 560 057

  
Name & Signature of Principal  
Dr. ASWATHA KUMAR  
Professor & Principal  
Dr. Aswatha Kumar. M  
PCE, Bengaluru  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057  
Signatures

Name of the Examiners

1. Dr. GEETHA C.R.  
2. Prabhavathi C.N.

  
Principal  
Prabhavathi C.N.

  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore- 560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



## CERTIFICATE

This is to certify that Ms. K. DEEPIKA, USN 1SG14LVS10 has satisfactorily completed the Project work entitled "FPGA IMPEMENTATION OF AN EFFICIENT DIGITAL WATERMARKING USING INTEGER WAVELET TRANSFORM AND HISTOGRAM TECHNIQUE" in partial fulfillment of the requirements as prescribed by the Visvesvaraya Technological University for 4<sup>th</sup> semester M. Tech. in VLSI Design and Embedded System during the year 2015-2016. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library.

Signature of Guide  
Prof. Sudha M. S.  
Assistant Professor,  
Dept. of ECE

Signature of HOD  
Prof. Sandhya Rani M. H.  
Associate Professor & HOD,  
Dept. of ECE  
Sapthagiri College of Engineering  
Bangalore-560 057

3/8/2016

Signature of Principal  
Dr. Aswatha Kumar  
Professor & Principal  
SCE, Bengaluru

Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057

### External Viva

Name of the Examiners

1. Sudha M.S
2. Baby H.T.

Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057

Signature with Date



# SAPTHAGIRI COLLEGE OF ENGINEERING

14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



## CERTIFICATE

This is to certify that Ms. JAMUNA H G., USN 1SG14LVS09 has satisfactorily completed the Project work entitled "IMPLEMENTATION OF SMARTER GRID EMBEDDED IN AN IOT PLATFORM" in partial fulfillment of the requirements as prescribed by the Visvesvaraya Technological University for 4<sup>th</sup> semester M. Tech. in VLSI Design and Embedded System during the year 2015-2016. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library.

Signature of Guide  
Prof. SHOBHA HUGAR  
Assistant Professor  
Dept. of ECE

  
(S.K. MURTHY)

Signature of HOD  
Prof. SANDHYA RANI M. H.  
Associate Professor & HOD,  
Dept. of ECE

Signature of Principal  
Dr. ASWATHA KUMAR M.  
Professor & Principal  
SCE, Bengaluru  
Principal  
Sapthagiri College of Engineering  
No. 14/5 Chikkasandra,  
Hesaraghatta Main Road,  
Bengaluru-560 057

Name of the Examiners

Shobha Hugar

Manjula B.B.

  
Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057

  
10/8/16.  
15/8/15.



# SAPTHAGIRI COLLEGE OF ENGINEERING

14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



## CERTIFICATE

This is to certify that **Mr. DINESH M.D., USN 1SG14LVS07** has satisfactorily completed the Project work entitled "**Design and Implementation of an Intelligent Embedded Based Low Cost System for Conservation of Power in Offices**" in partial fulfillment of the requirements as prescribed by the Visvesvaraya Technological University for 4<sup>th</sup> semester M.Tech. in VLSI Design and Embedded System during the year 2015-2016. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library.

Name & Signature of Guide  
**Prof. RAVISHANKARA M.N.**  
Associate Professor  
Dept. of ECE

Name & Signature of HOD  
**Prof. SANDHYA RANI M.H.**  
Associate Professor & HOD, ECE  
Sapthagiri College of Engineering  
Bengaluru-560 057.

Name & Signature of Principal  
**Dr. ASWATHA KUMAR M.**  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bengaluru-560 057

### External viva

Name of the Examiners

**NAGARAJ S.**

**RAVISHANKARA M.N**

Signature with date

Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057

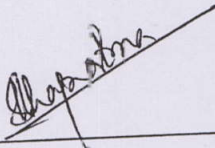


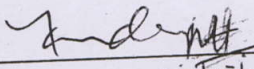
**SAPTHAGIRI COLLEGE OF ENGINEERING** 14/5,  
Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057  
**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

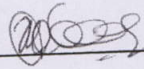


**CERTIFICATE**

This is to certify that **Mr. DILIP B G, USN1SG14LVS06** has satisfactorily completed the Project work titled **"An Efficient Architecture for Range Enhanced Packet Classification and its FPGA Implementation"** in partial fulfillment of the requirements as prescribed by the Visvesvaraya Technological University for 4<sup>th</sup> semester M. Tech. in VLSI Design and Embedded System during the year 2015-2016. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library.

  
Name & Signature of Guide  
Prof. Sasmita Mohapatra  
Associate Professor,  
Dept. of ECE

  
Name & Signature of HOD  
Electronics & Communication  
Prof. Sandhya Rani M. H.  
Sapthagiri College of Engineering  
Associate Professor & HOD  
Dept. of ECE, Bangalore-560 057

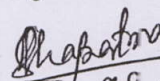
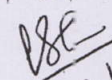
  
Name & Signature of Principal  
Dr. Aswatha Kumar  
Sapthagiri College of Engineering  
Associate Professor & Principal  
Hesaraghatta Main Road,  
SCE, Bengaluru  
Bangalore-560 057

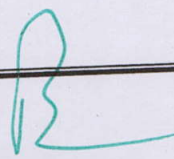
**External Viva**

Name of the Examiners

1. Sasmita Mohapatra
2. P. Bhavaneswari

Signature with Date

  
29.7.16  
  
29/7/16

  
Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

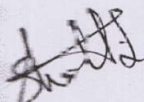
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

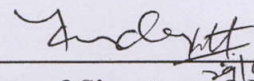
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING




## CERTIFICATE

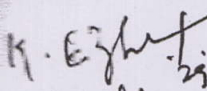
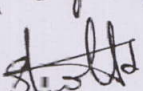
This is to certify that Ms. DEEPTI H BAGALI, USN 1SG14LVS05 has satisfactorily completed the Project work entitled “Design and Development of DTCWT based Automated Bic-marker Detection and Classification for Epilepsy” in partial fulfillment of the requirements as prescribed by the Visvesvaraya Technological University for 4<sup>th</sup> semester M. Tech. in VLSI Design and Embedded System during the year 2015-2016. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library.

  
Name & Signature of Guide  
Prof. SHOBHA S  
Associate Professor  
Dept. of ECE

  
Name & Signature of HOD  
Prof. SANDHYA RANI M H.  
Associate Professor & HOD,  
Dept. of ECE

  
Name & Signature of Principal  
Dr. Aswatha Kumar  
Professor & Principal  
SCE, Bengaluru

Name of the Examiners

1. K. E. J.  29/7/16  
2.  29/7/16

  
Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore- 560 057

Dr. Aswatha Kumar M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057  
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



## CERTIFICATE

This is to certify that Ms. CHAITRA P., USN 1SG14LVS04 has satisfactorily completed the Project work entitled "FPGA IMPLEMENTATION OF IMAGE ENHANCEMENT ALGORITHM USING ARTIFICIAL NEURAL NETWORK AND FUZZY LOGIC" in partial fulfillment of the requirements as prescribed by the Visvesvaraya Technological University for 4<sup>th</sup> semester M. Tech. in VLSI Design and Embedded System during the year 2015-2016. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library.

Signature of Guide  
Mrs. Agalya P.  
Associate Professor,  
Dept. of ECE

Signature of HOD  
Head of the Department  
Mrs. SANDHYA RANI M.H.  
Associate Professor & HOD,  
Sapthagiri College of Engineering  
Bangalore-560 057.

Signature of Principal  
Dr. Aswathi Kumar  
Sapthagiri College of Engineering  
14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057

### External Viva

Name of the Examiners

1. P. Shanathi
2. P. Agalya

Signature with Date

  
  
Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

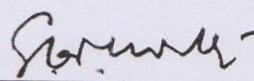
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

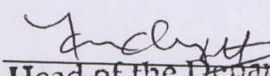
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

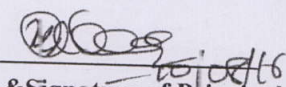


## CERTIFICATE

This is to certify that Ms. BRIGHTY LICY PIOUS, USN 1SG14LVS03 has satisfactorily completed the Project work entitled "DESIGN OF DTCWT BASED ALGORITHM FOR AUTOMATED EEG BIOMARKER DETECTION AND CLASSIFICATION OF ALS" in partial fulfillment of the requirements as prescribed by the Visvesvaraya Technological University for 4<sup>th</sup> semester M. Tech. in VLSI Design and Embedded System during the year 2015-2016. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library.

  
Name & Signature of Guide  
Prof. Satish Murthy  
Associate Professor  
Dept. of ECE

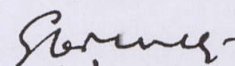
  
Name & Signature of HOD  
Prof. Sandhya Rani M. H.  
Associate Professor & HOD,  
Dept. of ECE, 560 057.

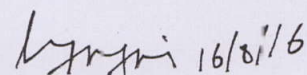
  
Name & Signature of Principal  
Dr. Aswatha Kumar M.  
Professor & Principal  
SCE, Bengaluru  
Sapthagiri College of Engineering  
No. 14/E, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057

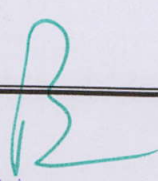
Name of the Examiners

1. Satish Murthy
2. Dr. Cyril Prasanna

Signatures



 16/8/16

  
Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore- 560 057



## SAPTHAGIRI COLLEGE OF ENGINEERING

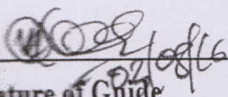
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

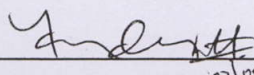
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

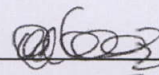


### CERTIFICATE

This is to certify that Ms. BINDUSHREE A, USN 1SG14LVS02 has satisfactorily completed the Project work entitled "DESIGN AND IMPLEMENTATION OF OBJECT TRACKING IN VIDEO USING PARTICLE FILTER ALGORITHM ON FPGA FRAMEWORK" in partial fulfillment of the requirements as prescribed by the Visvesvaraya Technological University for 4<sup>th</sup> semester M. Tech. in VLSI Design and Embedded System during the year 2015-2016. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library.

  
Signature of Guide  
Dr. ASWATHA KUMAR M  
Principal  
Dept. of ECE

  
Signature of HOD  
Head of the Department  
Prof. SANDHYA RANI M.H.  
Associate Professor & HOD,  
Sapthagiri College of Engineering  
Bengaluru-560 057.

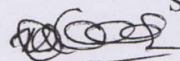
  
Signature of Principal  
Dr. ASWATHA KUMAR M  
Principal  
Dr. Aswatha Kumar. M  
Principal  
Sapthagiri College of Engineering

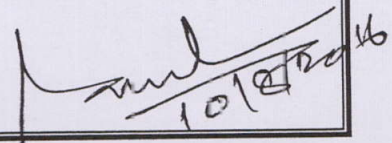
### External Viva

Name of the Examiners

Dr. ASWATHA KUMAR M  
Prof. NALLA RANGA P

Signature with date



  
10/12/2016

Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

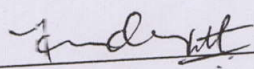
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

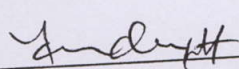
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

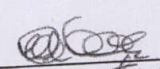


## CERTIFICATE

This is to certify that Mr. Ajeeth, USN 1SG14LVS01, has satisfactorily completed the Project work entitled "IoT Based Security System for Industries Using Raspberry Pi" in partial fulfillment of the requirements as prescribed by the Visvesvaraya Technological University for 4<sup>th</sup> semester M. Tech. in VLSI Design and Embedded Systems during the year 2015-2016. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library.

  
20/08/2016  
Name & Signature of Guide  
Prof. Sandhya Rani M H

  
Name & Signature of HOD  
Prof. Sandhya Rani M H  
Associate Professor & HOD

  
Name & Signature of Principal  
Dr. Aswatha Kumar M

Head of the Department  
Dept. of ECE, SCE

Head of the Department  
Dept. of ECE, SCE

Principal  
Dr. Aswatha Kumar. M  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bengaluru-560 057

Sapthagiri College of Engineering  
Bangalore-560 057.

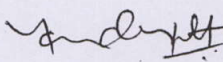
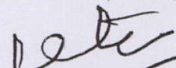
Sapthagiri College of Engineering  
Bangalore-560 057.

Name of the Examiners

1. Sandhya Rani M. H.

2. H. Venkatesh Kumar

Signature with Date

 26/08/16  
 26/8/16

Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore- 560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



### CERTIFICATE

This is to certify that **PRADEEP M K (ISG13LVS18)** has satisfactorily completed the Project work entitled "**Implementation of Embedded Remotely Controlled Intelligent Street Light System**", in partial fulfillment of the requirements as prescribed by the **Visveswaraya Technological University** for IV semester, **Master of Technology in VLSI Design and Embedded Systems** during the year 2016-17. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the department library.

Signature of the Guide

Mrs. P. Agalya Sivakumar

Associate Professor

Dept of ECE

Signature of HOD

Mrs. Sandhya Rani M H

Associate Professor & HOD

Dept of ECE Department  
Electronics & Communication  
Sapthagiri College of Engineering  
Bangalore

External Viva

Signature of the Principal

Dr. Aswatha Kumar M

Dr. Aswatha Kumar. M  
Principal  
Sapthagiri College of Engineering  
NSCB, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore-560 057

Signature

Name of the Examiner

Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore- 560 057



**SAPTHAGIRI COLLEGE OF ENGINEERING**  
**14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057**

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



**CERTIFICATE**

Certified that the project work entitled “**DESIGN AND IMPLEMENTATION OF AN EFFICIENT MAJORITY LOGIC FAULT DETECTOR/DECODER**” carried out by **Mrs. KAVYA B. S., USN 1SG13LVS17**, a bonafide student of **Sapthagiri College of Engineering** in partial fulfillment for the award of **Master of Technology in VLSI Design and Embedded Systems** of the **Visvesvaraya Technological University, Belagavi** during the year 2014-15. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the said Degree.

*B.N. Shobha*  
12/06/2015

Signature of the Guide  
**Mrs. B. N. SHOBHA**  
Associate Professor  
Dept. of ECE

*Sandhya Rani M.H.*  
12/06/15

Signature of the HOD  
Head of the Department  
**Mrs. SANDHYA RANI M.H.**  
Associate Professor & HOD  
Dept. of ECE  
Sapthagiri College of Engineering  
Bangalore-560 057.

*Dr. Aswatha Kumar M.*

Signature of the Principal  
**Dr. ASWATHA KUMAR M.**  
Principal  
SCE, Bengaluru

**Dr. Aswatha Kumar. M**  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore -560 057.

External Viva

Name of the examiners

1 *B.N. SHOBHA*

2 *Dr. Vijaya Prakash. AM*

*B*  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057

*B.N. Shobha*

*Vijaya* 26/08/15



# SAPTHAGIRI COLLEGE OF ENGINEERING

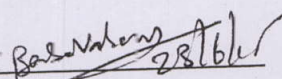
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

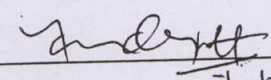
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

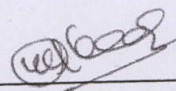


## CERTIFICATE

Certified that the project work entitled " Design and Implementation of Unique Video Oculographic Algorithm Using Real Time Video Processing on FPGA " carried out by KARTHK K.P., USN 1SG13LVS16, a bonafide student of Sapthagiri College of Engineering in partial fulfillment for the award of Master of Technology in VLSI Design and Embedded Systems of the Visvesvaraya Technological University, Belagavi during the year 2014-2015. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

  
Signature of the Guide  
Mr. BASAVARAJU S.  
Assistant Professor,  
Dept. of ECE

  
Signature of the HOD  
Mrs. SANDHYA RANI M.H.  
Associate Professor & HOD,  
Department of ECE & Communication  
Sapthagiri College of Engineering  
Bangalore- 560 057.

  
Signature of the Principal  
Dr. ASWATHA KUMAR M.  
Principal  
Dr. Aswatha Kumar. M  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore -560 057.

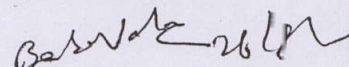
External Viva

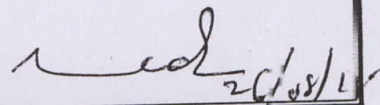
Name of the Examiners

1) BASAVARAJU S

2) Jagadeesh B. Karad

Signature with Date

  
26/08/15

  
26/08/15

Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

BENGALURU-560057

(Affiliated to Visvesvaraya Technological University, Belagavi, Karnataka)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



## CERTIFICATE

This is to certify that **YESHVANTH H J**, USN 1SG13LVS15, a bonafide student of Sapthagiri College of Engineering has satisfactorily completed the project titled "**Design, Development and FPGA Implementation of Algorithms for Whitefly Pest Detection in Plants**" in partial fulfillment of the requirements as prescribed by the VTU for 4<sup>th</sup> semester, Master of Technology in "**VLSI DESIGN & EMBEDDED SYSTEMS**" and submitted the report during the academic year 2014-15. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

*B.N. Shobha*  
13/06/2015

Signature of the Guide

**Mrs. B.N. Shobha**

Associate. Prof.

Dept. of ECE

*Sandhya Rani M.H.*

Signature of HOD

**Mrs. Sandhya Rani M.H.**

Head of the Department  
Associate Prof & HOD  
Electronics & Communication  
Dept. of ECE

Sapthagiri College of Engineering

Bangalore - 560 057.

External viva

*Dr. Aswatha Kumar M*

Signature of Principal

**Dr. Aswatha Kumar M**

Principal  
**Dr. Aswatha Kumar M**  
SCE, Bangalore  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore - 560 057.

Name of the Examiners

1.

2.

Signature with Date

*B*  
Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore- 560 057



**SAPTHAGIRI COLLEGE OF ENGINEERING**  
No. 14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**



**CERTIFICATE**

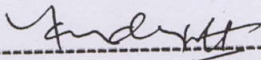
Certified that the project work entitled "**DESIGN AND IMPLEMENTATION OF LOW POWER HYBRID TYPE TCAM USING PARALLEL PAI-SIGMA MATCH-LINE SENSING SCHEME**" carried out by **Ms. Yashaswini H. G., USN 1SG13LVS14**, a bonafide student of Sapthagiri College of Engineering in partial fulfillment for the award of Master of Technology in VLSI Design and Embedded Systems of the Visvesvaraya Technological University, Belagavi during the year 2014-15. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the said Degree.

  
-----

Signature of the Guide


**Dr. ASWATHA KUMAR M.**  
Principal  
SCE, Bengaluru

**Dr. Aswatha Kumar. M**  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore -560 057.

  
-----

Signature of the HOD

**Mrs. SANDHYA RANI M.H.**  
Associate Professor & HOD  
Head of the Department  
Electronics & Communication  
Sapthagiri College of Engineering  
Bangalore- 560 057.  
External Viva

  
-----

Signature of the Principal

**Dr. ASWATHA KUMAR M.**  
Principal  
SCE, Bengaluru

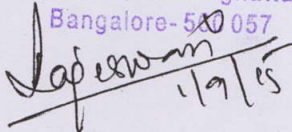
**Dr. Aswatha Kumar. M**  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore -560 057.

Name of the examiners

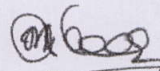
1.

2. **Dr. RAJESWAR**

Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore- 560 057

  
1/9/15

Signature with date

  
-01/09/15



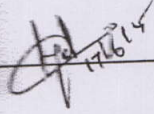
# SAPTHAGIRI COLLEGE OF ENGINEERING

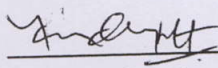
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057  
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

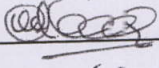


## CERTIFICATE

Certified that the project work entitled "DESIGN AND FPGA IMPLEMENTATION OF AN EFFICIENT ENHANCEMENT ALGORITHM FOR CONSUMER ELECTRONICS IMAGES" carried out by VARSHINI K., USN 1SG13LVS12, a bonafide student of Sapthagiri College of Engineering in partial fulfillment for the award of Master of Technology in VLSI Design and Embedded Systems of the Visvesvaraya Technological University, Belagavi during the year 2014-2015. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

  
Signature of the Guide  
Mrs. AGALYA P.  
Associate Professor,  
Dept. of ECE

  
Signature of the HOD  
17/06/2015  
Mrs. SANDHYA RANI  
Associate Professor & HOD  
Electronics & Communication  
Dept. of ECE  
Sapthagiri College of Engineering  
Bangalore-560 057.

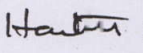
  
Signature of the Principal

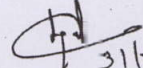
Dr. ASWATHA KUMAR M.  
Principal  
SCE, Bengaluru  
Dr. Aswatha Kumar. M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore -560 057.

Name of the Examiners

- 1) Dr. M. C. Hanumantharaju
- 2) P. Agalya

Signature with Date

 31/08/15

 31/8/15

Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057

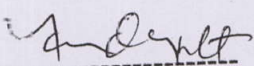


**SAPTHAGIRI COLLEGE OF ENGINEERING**  
**14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057**  
**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

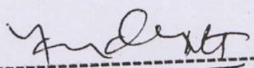


**CERTIFICATE**

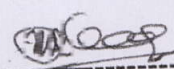
Certified that the project work entitled "**DESIGN AND FPGA IMPLEMENTATION OF AN ON-CHIP NETWORK WITH PORT ADDRESSING SCHEME FOR PERMUTATION NETWORK**" carried out by **Umadevi R., USN 1SG13LVS11**, a bonafide student of Sapthagiri College of Engineering in partial fulfillment for the award of **Master of Technology** in VLSI Design and Embedded Systems of the Visvesvaraya Technological University, Belagavi during the year 2014-15. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the said Degree.

  
Signature of the Guide

Mrs. SANDHYA RANI M.H.  
Associate Professor & HOD  
Dept. of ECE  
SCE, Bengaluru

  
Signature of the HOD

Mrs. SANDHYA RANI M.H.  
Head of the Department  
Associate Professor & HOD  
Dept. of ECE Engineering  
Sapthagiri College of Engineering  
SCE, Bengaluru 560057.

  
Signature of the Principal

Dr. ASWATHA KUMAR M.  
Principal  
SCE, Bengaluru  
Dr. Aswatha Kumar. M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore -560 057.

External Viva

Name of the examiners


1. Sandhya Rani M-H.

2. Nagaraj Kumar

Principal

Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560057

Signature with date

  
mmg  
21/8/15



# SAPTHAGIRI COLLEGE OF ENGINEERING

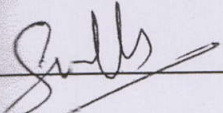
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

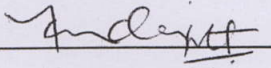
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

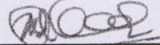


## CERTIFICATE

Certified that the project work entitled "DESIGN AND FPGA IMPLEMENTATION OF RELIABLE CRYPTOGRAPHIC SHA-3 ALGORITHM" carried out by TEJASWINI USN 1SG13LVS10, a bonafide student of Sapthagiri College of Engineering in partial fulfillment for the award of Master of Technology in VLSI Design and Embedded Systems of the Visvesvaraya Technological University, Belagavi during the year 2014-2015. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

  
Signature of the Guide  
Mrs. SUDHA M.S.  
Assistant Professor,  
Dept. of ECE

  
17/06/2015  
Signature of the HOD  
Mrs. SANDHYA RANJITH  
Head of the Department  
Associate Professor & HOD,  
Electronics & Communication  
Dept. of ECE  
Sapthagiri College of Engineering  
Bangalore-560 057.

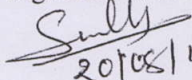
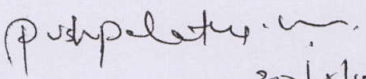
  
Signature of the Principal  
Dr. ASWATHA KUMAR M.  
Principal  
SCE, Bengaluru  
Dr. Aswatha Kumar. M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore -560 057.

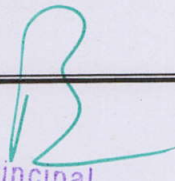
External Viva

Name of the Examiners

- 1) Sudha.m.s
- 2) K. N. Pushpalath.

Signature with Date

  
20/08/15  
  
20/08/15

  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



## CERTIFICATE

Certified that the project work entitled "FPGA IMPLEMENTATION FOR AUTOMATED CLASSIFICATION OF BREAST CANCER USING SUPPORT VECTOR MACHINES" carried out by Ms. Stuti Sharon, USN 1SG13LVSD9, a bonafide student of Sapthagiri College of Engineering in partial fulfillment for the award of Master of Technology in VLSI Design and Embedded Systems of the Visvesvaraya Technological University, Belagavi during the year 2014-2015. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

*Signature*  
5/6/15

Signature of the Guide

Mrs. VANI V.  
Assistant Professor, ECE  
SCE, Bengaluru

*Signature*  
5/6/15

Signature of the HOD

Mrs. SANDHYA RANI M H.  
Head of the Department  
Assoc. Prof & HOD, ECE  
Electronics & Communication  
SCE, Bengaluru  
Sapthagiri College of Engineering  
Bangalore-560 057.

External Viva

*Signature*

Signature of the Principal

Dr. ASWATHA KUMAR M.  
Principal  
Dr. Aswatha Kumar. M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore -560 057.

Name of the Examiners

1) Dr. Siva Yellampalli

2) Vani. V

*Signature*  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore- 560 057

Signature with Date

*Signature*  
20/8/15

*Signature*  
20/8/15



# SAPTHAGIRI COLLEGE OF ENGINEERING

BENGALURU-560057

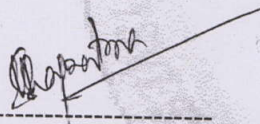
(Affiliated to Visvesvaraya Technological University, Belagavi, Karnataka)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



## CERTIFICATE

This is to certify that **SHAMANTH R., USN 1SG13LVS07**, a bonafide student of Sapthagiri College of Engineering has satisfactorily completed the project titled **"Design, Development and FPGA Implementation of Chronic Liver Disease detection system"** in partial fulfillment of the requirements as prescribed by the VTU for 4<sup>th</sup> semester, Master of Technology in **"VLSI DESIGN & EMBEDDED SYSTEMS"** and submitted the report during the academic year 2014-15. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

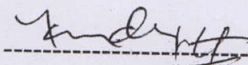
  
-----

Signature of the Guide

**Mrs. Sasmita Mohapatra**

Associate. Prof.

Dept. of ECE

  
-----

Signature of HOD

**Mrs. Sandhya Rani M.H.**

Associate Prof. & HOD

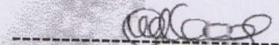
Dept. of ECE

Electronics & Communication

Sapthagiri College of Engineering

Bangalore-560 057.

External viva

  
-----

Signature of Principal

**Dr. Aswatha Kumar M**

Principal

Sapthagiri College of Engineering

No. 14/5, Chikkasandra,

Hesaraghatta Main Road,

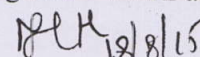
Bangalore -560 057.

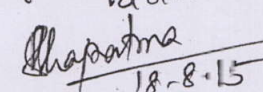
Name of the Examiners

1. P. Shanthi

2. Sasmita Mohapatra

Signature with Date

  
18/8/15

  
18-8-15

Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



**SAPTHAGIRI COLLEGE OF ENGINEERING**  
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



**CERTIFICATE**

Certified that the project work entitled "FPGA IMPLEMENTATION OF LEAST COMPLEX S-BOX FOR FAULT DETECTION" carried out by Mrs. N. SANDHYA, USN 1SG13LVS06, a bonafide student of Sapthagiri College of Engineering in partial fulfillment for the award of Master of Technology in VLSI Design and Embedded Systems of the Visvesvaraya Technological University, Belagavi during the year 2014-15. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the said Degree.

Signature of the Guide

Dr. ASWATHA KUMAR M.  
Principal  
SCE, Bengaluru  
**Dr. Aswatha Kumar. M**  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore -560 057.

Signature of the HOD

Mrs. SANDHYA RANI M.H.  
Associate Professor & HOD  
Dept. of ECE

External Viva

Signature of the Principal

Dr. ASWATHA KUMAR M.  
Principal  
SCE, Bengaluru  
**Dr. Aswatha Kumar. M**  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore -560 057.

Signature with date

Name of the examiners

1. Dr. Aswath Kumar M.
2. Narayan A R

Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore- 560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

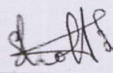
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



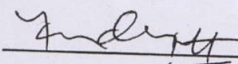
## CERTIFICATE

Certified that the project work entitled "Design and Implementation of Interleaver for WLAN Applications" carried out by PAVITHRA C., USN 1SG13LVS05, a bonafide student of Sapthagiri College of Engineering in partial fulfillment for the award of Master of Technology in VLSI Design and Embedded Systems of the Visvesvaraya Technological University, Belagavi during the year 2014-2015. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

 11/6/15

Signature of the Guide

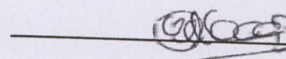
Mrs. SHOBHA S.  
Associate Professor,  
Dept. of ECE



17/06/2015  
Signature of the HOD

Mrs. SANDHYA RANI M. H.  
Associate Professor & HOD,  
Dept. of ECE Engineering  
Sapthagiri College of Engineering  
Bangalore- 560 057.

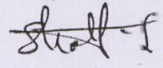
External Viva



Signature of the Principal

Dr. ASWATHA KUMAR M.  
Principal,  
SCE, Bengaluru

Dr. Aswatha Kumar. M  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore -560 057.  
Signature with Date

 29/8/15

Name of the Examiners

1) S. SHOBHA

2) Dr. A. SHOBHA RANI

  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

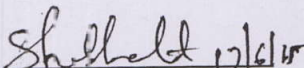
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

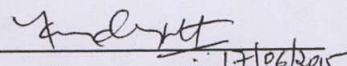
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

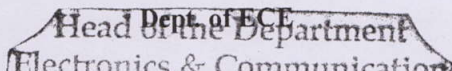


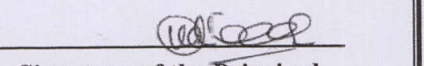
## CERTIFICATE

Certified that the project work entitled "IMPLEMENTATION OF AN EFFICIENT LDPC DECODER USING MESSAGE PASSING ALGORITHM FOR POWER LINE COMMUNICATIONS" carried out by Ms. PALLAVI C., USN 1SG13LVS04, a bonafide student of Sapthagiri College of Engineering in partial fulfillment for the award of Master of Technology in VLSI Design and Embedded Systems of the Visvesvaraya Technological University, Belagavi during the year 2014-2015.. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

  
Signature of the Guide  
Mrs. SHOBHA HUGAR  
Assistant Professor  
Dept. of ECE

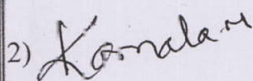
  
Signature of the HOD  
Mrs. SANDHYA RANI M.H.  
Associate Professor & HOD  
Dept. of ECE

  
Head of the Department  
Electronics & Communication  
Sapthagiri College of Engineering  
Bangalore - 560 057.  
External Viva


  
Signature of the Principal  
Dr. ASWATHA KUMAR M.  
Principal  
SCE, Bengaluru  
Dr. Aswatha Kumar. M.  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore - 560 057.

Name of the Examiners

1)

2) 

Signature with Date

 31/8/15

  
Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057



# SAPTHAGIRI COLLEGE OF ENGINEERING

14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru-560057

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



### CERTIFICATE

This is to certify that **GANGADHARA SWAMY M S (1SG13LVS02)** has satisfactorily completed the Project work entitled **"Implementation of Hand Sign Interpreter Using Embedded Processor"** in partial fulfillment of the requirements as prescribed by the **Visveswaraya Technological University** for IV semester, **Master of Technology in VLSI Design and Embedded Systems** during the year 2016-17. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated in the report deposited in the department library.

Signature of the Guide

**Mrs. Sandhya Rani M H**

Associate Professor & HOD

Dept of ECE, SCE

Signature of HOD

**Mrs. Sandhya Rani M H**

Associate Professor & HOD

Head of the Department

Dept of ECE, SCE

Electronics and Communication  
Engineering  
Sapthagiri College of Engineering  
Bengaluru - 560 057

External Viva

Signature of the Principal

**Dr. Aswatha Kumar M**

Dr. Aswatha Kumar. M

Principal

Sapthagiri College of Engineering

No. 14/5, Chikkasandra,

Hesaraghatta Main Road,

Bangalore-560 057

Name of the Examiner

1. Sandhya Rani M.H.

2. Dr. A. Venkatesh Kumar

Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore-560 057

Signature

19/08/2017

19/8/17



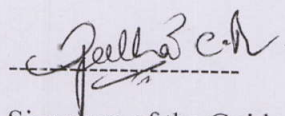
**SAPTHAGIRI COLLEGE OF ENGINEERING**  
14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru- 560057

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



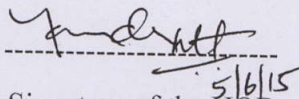
**CERTIFICATE**

Certified that the project work entitled "FPGA IMPLEMENTATION OF SEPARABLE REVERSIBLE DATA HIDING OF AES ENCRYPTED DATA" carried out by Mrs. A. G. L. MANASA SREE N., USN 1SG13LVS01, a bonafide student of Sapthagiri College of Engineering in partial fulfillment for the award of Master of Technology in VLSI Design and Embedded Systems of the Visvesvaraya Technological University, Belagavi during the year 2014-15. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the said Degree.

  
-----

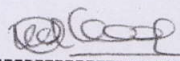
Signature of the Guide

Mrs. GEETHA C.R.  
Assistant Professor  
Dept. of ECE

  
-----

Signature of the HOD

Mrs. SANDHYA RANI M.H.  
Head of the Department  
Dept. of ECE Communication  
Sapthagiri College of Engineering  
Bangalore - 560 057  
External Viva

  
-----

Signature of the Principal

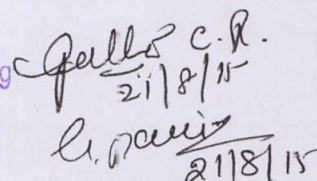
Dr. Aswatha Kumar M.  
Principal  
Sapthagiri College of Engineering  
No. 14/5, Chikkasandra,  
Hesaraghatta Main Road,  
Bangalore - 560 057.

Name of the examiners

1. GEETHA C.R.

2. G. PARIMALA GANDHI

Signature with date

  
21/8/15

Principal  
Sapthagiri College of Engineering  
Chikkasandra, Hesaraghatta Road,  
Bangalore - 560 057