



# Raja Rajeswari College of Engineering







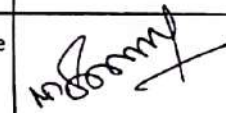

## Department of Electronics and Communication Engineering





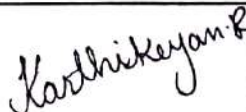
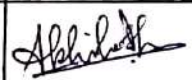



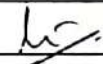



ACADEMIC YEAR 2021-2022

18ECP78- PROJECT WORK

Batch No.	USN	Name Of The Students	Guide Name	Guide's Specialization	Title of the Project	Guide's Signature
1	1RR18EC002	Abdul Hannan Khan	Dr. Rangaiah L	Embedded Systems	Commercial power saver	
	1RR18EC005	Akash C Sajjan				
	1RR18EC009	Arjun E				
	1RR18EC017	Chethan M				
2	1RR17EC009	Anup R	Dr. Muruganandham A	Digital Image Processing	Anomaly detection in pharmaceutical pills using image processing	
	1RR17EC076	Nathasha B R				
	1RR17EC046	Girish J				
	1RR17EC059	Kavya J				
3	1RR18EC014	Bodhi Thrupthi	Dr. Vijaya S M	Image Processing	Anomalous human activity recognition in surveillance videos.	
	1RR18EC052	Megha J				
	1RR18EC100	Shubha C				
	1RR18EC114	Thanmaya S				
4	1RR18EC006	Akshatha M	Dr. Punal M Arabi	Medical Image Processing	EEG based brain controlled wheel chair with emergency assistance	
	1RR18EC011	Bharathkumar V				
	1RR18EC013	Bhoomika N				
	1RR18EC038	Jison Abraham Jose				
5	1RR18EC029	Gagana M	Dr. R Gangadhar Reddy	Artificial Intelligence	Hybrid electric vehicle with intelligent on board diagnosis system	
	1RR18EC033	H R Sowndarya				
	1RR18EC039	Kavana K				
6	1RR18EC012	Bhaskar M E	Dr. Sumitha Manoj	IoT & WSN	Greenhouse monitoring and controlling using iot	
	1RR18EC016	Chandrashekar R				
	1RR18EC024	Dinesh Gowda M				
	1RR16EC036	Karthik T J				
7	1RR18EC026	Encilatra J	Dr. D. Soby	Image Processing	Students smart card	
	1RR18EC008	Anusha S				
	1RR18EC072	Praveen Kumar N				
	1RR18EC130	Yashwanth Gowda B R				
8	1RR18EC020	Devika U	Prof. Sreepathi V	IoT & WSN	IoT Integrated System for Water Quality Monitoring and Management in Wastewater Treatment Plants	
	1RR18EC021	Dhakshayini J				
	1RR18EC121	Varsha D				
	1RR18EC119	Usha M				
	1RR18EC040	Kavya K				

9	1RR18EC041	Kavya Shankar S	Prof. Lokesh K	Embedded Systems	Fruit calorie plate	
	1RR18EC047	M Ankitha Chowdary				
	1RR18EC044	Lahari I				
10	1RR18EC056	Nanditha.K	Prof. Sunitha R	Communication Systems	Behavioural based students stress detection with attendance management systems	
	1RR18EC004	Aishwarya.S				
	1RR18EC036	Impana.R				
	1RR18EC032	Girija .HS				
11	1RR18EC027	Fathima Bee	Prof. Santhosh Chavan	IoT & WSN	Non Invasive blood glucose monitoring using iot	
	1RR18EC001	Aashika A				
	1RR18EC010	Bhairavi H L				
	1RR18EC015	Chaithrashree Ramesh				
12	1RR18EC022	Dhanush Kumar Singh H	Prof. Supraja M	Sensor Network	Smart Trolley system for automated billings using Raspberry Pi	
	1RR18EC061	P J Suhas				
	1RR18EC059	Nischal S Bhat				
	1RR18EC049	Manjesha H M				
13	1RR18EC028	Gagan N Y	Prof. Vani S Badiger	Medical Image Processing	Design of Wireless Electromyography (EMG) Monitoring System for Muscle Activity Detection on Parkinson Disease	
	1RR18EC031	Gaurav K M				
	1RR18EC034	Hamsa N R				
14	1RR18EC007	Anusha D	Prof. Haritha K S	Artificial Intelligence	Design and development of sewage cleaning Mobile robot	
	1RR18EC023	Dharuni S				
	1RR18EC053	Meghana T Aradhya				
	1RR18EC054	Minal M C				
15	1RR17EC021	Chaithanya R	Prof. Suresh M	Medical Image Processing	Deep learning approaches for bone cancer segmentation using x ray images	
	1RR17EC070	Megha B				
	1RR18EC045	Lekhana HM				
	1RR18EC055	Monica N				
16	1RR18EC051	Manoj PG	Prof. Abubakkar Sithik	Network Security	Implementation of authentication for Web of things by using SHA-3 and salsa20 algorithm	
	1RR18EC050	Manjunatha S				
	1RR18EC057	Naveen Kumar N				
	1RR18EC037	Jagadish				
17	1RR18EC035	Harish Kumar M	Prof. Deepika J	Artificial Intelligence using machine learning	Stress detection using AI and bio sensors	
	1RR18EC048	Malatesh M				
	1RR18EC025	D V Narasimha Reddy				
	1RR18EC082	Ranjan BP				
18	1RR18EC122	Varun C	Dr. Rangaiah L	Embedded Systems	A novel approach for a smart indoor farm	
	1RR18EC124	Vidya C N				
	1RR18EC125	Vishwajith V Pai				
	1RR18EC077	Rahul Sutar				



19	1RR18EC058	Navyashree D	Prof.Anudeep K	Image Processing	Fake currency detection	
	1RR18EC060	Niveditha V				
	1RR18EC111	Swati Bhogesh				
	1RR18EC115	Thejaswini N				
20	1RR18EC042	Krishna .R	Prof.Vinodha G	Medical Image Processing	Multiple parameter patient health monitoring system	
	1RR18EC062	P.Nikhil.Gowda				
	1RR18EC065	Pavan.S				
	1RR18EC075	Punith.B				
21	1RR18EC107	Sumithra N	Prof.Karthikeyan R	Medical Image Processing	Diagnosis of skin cancer through classification of Melanoma and Nevus using RVM	
	1RR18EC110	Sushma Ramesh				
	1RR18EC128	Yashaswini S				
	1RR19EC405	Ranjitha G D				
22	1RR18EC120	Varna.V.Nadiger	Prof.Abhilasha CP	Network Security	Women safety video surveillance autonomous security night patrolling robot	
	1RR18EC108	Supriya.K.T				
	1RR18EC099	Shreya.S.Shanbhag				
23	1RR18EC084	Rishika A Anekar	Dr. Sumitha Manoj	Embedded Systems	Smart city alert management system for rules violators	
	1RR18EC088	Sahana N				
	1RR18EC096	Shakthi V				
	1RR18EC097	Shashank H R				
24	1RR18EC069	Pramod DR	Prof. Sreepathi V	Artificial Intelligence	Pesticide spray robot with gesture control device	
	1RR18EC087	Sachin M Machakanura				
25	1RR19EC406	Rashmi J	Prof. Loksha K	Speech Processing	AI based smart voice assistance for villages and rural places	
	1RR18EC080	Ramya P V				
	1RR18EC081	Ramya R				
	1RR18EC083	Reshmi L				
26	1RR18EC093	Sanjay P	Prof. Sunitha R	Image Processing	16*16 Metamaterial Based Butler Matrix for 5G Applications	
	1RR18EC092	Sanjay P				
27	1RR18EC070	Prashanthini M	Prof. Santosh Chavan	Wireless Sensor Network	Improved the efficiency of iot in agriculture by introduction optimum energy harvesting in WSN	
	1RR18EC078	Rajeshwari S				
	1RR18EC079	Rakshitha M				
28	1RR18EC127	Yashaswini D	Prof. Ajay M	Solar Energy System	Solar tracker for agriculture system control with intelligent detection of wild animals and electrical fence arrangement.	
	1RR18EC068	Prajwal Ganesh Ms				
	1RR19EC403	Manjunath Y				
29	1RR18EC118	Ummehani	Prof. Vani S Badiger	IoT & WSN	Wireless sensor networks for environmental radiation monitoring using IOT	
	1RR18EC095	Shabistan Nayab				
	1RR18EC113	Tejaswini M				
	1RR18EC086	Rohith J				

30	1RR18EC106	Suhas K Gowda	Prof. Santosh G	Medical Image Processing	Smart ventilator system for covid-19 pandemic.	Santosh.g
	1RR19EC404	Md Hanief				
	1RR19EC401	Maharaj O				
31	1RR18EC064	Pavan R	Prof. Santosh G	Sensor Network	Real time vehicle signal breaking, vehicle detection and speed tracking using open cv and RFID.	Santosh.g
	1RR18EC089	Saakamma N S				
	1RR18EC046	Madan C				
	1RR18EC063	Pallavi C				
32	1RR19EC402	Malavika C	Prof. Haritha K S	Cryptography	Revocable Attribute based encryption with data integrity in clouds	HARITHA
	1RR19EC400	Bindhu S				
	1RR18EC101	Shushmitha G				
	1RR19EC407	Sharath S				
33	1RR18EC105	Sourav S Adiga	Prof. Chaitanya S	Network Security	Centralized framework for next generation routers to supervise all the nodes and to build a RF heatmap	Chaitanya
	1RR18EC129	Yashvanth K.V				
	1RR18EC123	Varun .N				
	1RR18EC073	Preetham.N				
34	1RR18EC090	Sangeetha G	Prof. Deepika J	Wireless Sensor Network	Multi agent based clustering and collision detection in VANET	Deepika
	1RR18EC109	Sushma B. A				
	1RR18EC116	Trupthi S				
	1RR18EC043	Anjali Jamuda				
35	1RR18EC102	Shwetha Sagarad	Prof. Sreepathi V	Microwave Engineering	Software defined radio (SDR) for air traffic monitor and management	Sreepathi
	1RR18EC074	Priyanka B H				
	1RR17EC032	Darshan L				

C. R. Sreechiff  
PROFESSOR & HEAD  
DEPT. OF ELECTRONICS & COMMUNICATIONS  
RAJAWESWAR COLLEGE OF ENGINEERING  
BENGALURU - 560 074



**VISVESVARAYATECHNOLOGICALUNIVERSITY**

JnanaSangama, Belgaum-590014



**A PROJECT REPORT  
ON**

**FAKE CURRENCY DETECTION**

**SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE  
AWARD OF DEGREE OF**

**BACHELOR OF ENGINEERING  
IN  
ELECTRONICS AND COMMUNICATION ENGINEERING**

**Submitted by**

NAVYASHREE D

IRR18EC058

NIVEDITHA V

IRR18EC060

SWATI BHOGESH

IRR18EC111

THEJASWINI N

IRR18EC115

Under guidance of

Dr. Muruganandham A

Professor

Dept. of ECE, RRCE



**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING  
RAJARAJESHWARI COLLEGE OF ENGINEERING  
BENGALURU -560074**

2021-2022



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**  
**JnanaSangama, Belagavi – 590018**



A Project Report on

**“FAKE CURRENCY DETECTION”**

Submitted in partial fulfilment of the requirement for the award of degree of

**BACHELOR OF ENGINEERING**  
**IN**  
**ELECTRONICS AND COMMUNICATION ENGINEERING**

Submitted by

<b>NAVYASHREE D</b>	<b>(1RR18EC058)</b>
<b>NIVEDITHA V</b>	<b>(1RR18EC060)</b>
<b>SWATI BHOGESH</b>	<b>(1RR18EC111)</b>
<b>THEJASWINI N</b>	<b>(1RR18EC115)</b>

Under the guidance of

**Dr. Muruganandham A**

**Professor**

**Dept. of ECE**



**DEPT. ELECTRONICS & COMMUNICATION ENGINEERING**  
**RAJARAJESWARI COLLEGE OF ENGINEERING**

[Accredited by NBA & NAAC, Affiliated to VTU, Belagvi, Approved by AICTE, New Delhi]  
#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74



# RAJARAJESWARI COLLEGE OF ENGINEERING

[NBA & NAAC Accredited, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]  
#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

## ELECTRONICS & COMMUNICATION ENGINEERING



### CERTIFICATE

This is to certified that the project work entitled **"FAKE CURRENCY DETECTION"** is a bonafide work carried out by **NAVYASHREE D (1RR18EC058), NIVEDITHA V (1RR18EC060), SWATI BHOGESH (1RR18EC111), THEJASWINI N (1RR18EC115)** in partial fulfilment for the award of **Bachelor of Engineering in Electronics and Communication Engineering** of the **Visvesvaraya Technological University, Belagavi** during the year 2021-2022. 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.


  
Signature of the Guide

**Dr. Muruganandham A**

  
Signature of the HOD

**Dr. L. Rangaiah**

**PROFESSOR & HEAD**  
DEPT. OF ELECTRONICS & COMMUNICATION ENG  
RAJARAJESWARI COLLEGE OF ENGG.  
BENGALURU - 560 074

  
Signature of the Principal

**Dr. T. Chandrashekar**

Principal

**RAJARAJESWARI**

**COLLEGE OF ENGINEERING**

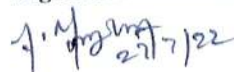
Ramohalli Cross, Bengaluru-74

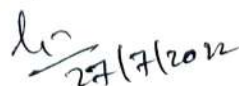
Name of the Examiners:

1. **Dr. L. Muruganandham**

2. **Dr. Suvitha R**

Signature with date:

  
27/7/22

  
27/7/2022



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**Jnana Sangama, Belagavi – 590018**



**A Final Project Report on**

**“Women Safety Video Surveillance Autonomous Security Night  
Patrolling Robot”**

**Submitted in partial fulfillment of the requirement for the award of degree of**

**BACHELOR OF ENGINEERING**

**IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

**Submitted by**

**VARNA V NADIGER (1RR18EC120)**

**SUPRIYA K T (1RR18EC108)**

**SHREYA S SHANBHAG (1RR18EC099)**

**Under the Guidance of**

**Dr. R Gangadhar Reddy**

**Associate Professor**

**Dept. of ECE**

**RRCE**



**DEPT. ELECTRONICS & COMMUNICATION ENGINEERING**

**RAJARAJESWARI COLLEGE OF ENGINEERING**

**[Accredited by NBA & NAAC, affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]**

**#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74**

**2021-2022**



# **VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**Jnana Sangama, Belagavi – 590018**



**A Final Project Report on**

**“Women Safety Video Surveillance Autonomous Security Night  
Patrolling Robot”**

**Submitted in partial fulfilment of the requirement for the award of degree of**

**BACHELOR OF ENGINEERING**

**IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

**Submitted by**

**VARNA V NADIGER (1RR18EC120)**

**SUPRIYA K T (1RR18EC108)**

**SHREYA S SHANBHAG (1RR18EC099)**

**Under the Guidance of**

**Dr. R Gangadhar Reddy**

**Associate Professor**

**Dept. of ECE**

**RRCE**



**DEPT. ELECTRONICS & COMMUNICATION ENGINEERING**

**RAJARAJESWARI COLLEGE OF ENGINEERING**

**[Accredited by NBA & NAAC, affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]**

**#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74**

**2021-2022**

# RAJARAJESWARI COLLEGE OF ENGINEERING

(NBA & NAAC Accredited, affiliated to VTU, Belagavi, Approved by AICTE, New Delhi)

#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

## ELECTRONICS & COMMUNICATION ENGINEERING



### CERTIFICATE

This is to certify that the project work entitled "Women Safety Video Surveillance Autonomous Security Night Patrolling Robot" is a Bonafide work carried out by VARNA V NADIGER (1RR18EC120), SUPRIYA K T (1RR18EC108), SHREYA S SHANBHAG (1RR18EC099) in partial fulfillment for the award of Bachelor of Engineering in Electronics and Communication Engineering of the Visvesvaraya Technological University, Belagavi during the year 2021-2022. 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.

  
Signature of the Guide

Dr. R. Gangadhar Reddy

  
Signature of the HOD

Dr. L. Rangaiah

  
Signature of the Principal

Dr. T. Chandrashekar

Principal

RAJARAJESWARI

COLLEGE OF ENGINEERING

Ramohalli Cross, Bengaluru-74

Name of the Examiners:

1. Dr. R. Gangadhar Reddy
2. Dr. Rangaiah L

Signature with date:

  
26/7/22

  
26/7/22



# **VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**Jnana Sangama, Belagavi – 590018**



**A Project Report on**

**“Improved the efficiency of IoT in agriculture by introducing optimum energy harvesting in WSN”**

**Submitted in partial fulfilment of the requirement for the award of degree of**

**BACHELOR OF ENGINEERING**

**IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

**Submitted by**

**PRASHANTHINI M (1RR18EC070)**

**RAJESHWARI S (1RR18EC078)**

**RAKSHITHA M (1RR18EC079)**

**Under the guidance of**

**Mr. Santosh Chavan**

**Assistant professor**

**Dept. of ECE**

**RRCE**



**DEPT. ELECTRONICS & COMMUNICATION ENGINEERING**

**RAJARAJESWARI COLLEGE OF ENGINEERING**

**[Accredited by NBA & NAAC, affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]**

**#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74**

**2021-2022**



# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Jnana Sangama, Belagavi – 590018



A Project Report on

**“Improved the efficiency of IoT in agriculture by introducing optimum energy harvesting in WSN”**

Submitted in partial fulfilment of the requirement for the award of degree of

**BACHELOR OF ENGINEERING**

**IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

Submitted by

**PRASHANTHINI M (1RR18EC070)**

**RAJESHWARI S (1RR18EC078)**

**RAKSHITHA M (1RR18EC079)**

Under the guidance of

**Mr. Santosh Chavan**

**Assistant professor**

**Dept. of ECE**

**RRCE**



**DEPT. ELECTRONICS & COMMUNICATION ENGINEERING**

**RAJARAJESWARI COLLEGE OF ENGINEERING**

[Accredited by NBA & NAAC, affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

**#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74**

**2021-2022**



**RAJARAJESWARI COLLEGE OF ENGINEERING**  
[NBA & NAAC Accredited, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]  
#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

**ELECTRONICS & COMMUNICATION ENGINEERING**



**CERTIFICATE**


This is to certify that the project work entitled **"Improved the efficiency of IoT in agriculture by introducing optimum energy harvesting in WSN"** is a bonafide work carried out by **PRASHANTHINI M (IRR18EC070)**, **RAJESHWARI S (IRR18EC078)**, **RAKSHITHA M (IRR18EC079)** in partial fulfilment for the award of **Bachelor of Engineering in Electronics and Communication Engineering** of the **Visvesvaraya Technological University, Belagavi** during the year 2021-2022. 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.

  
Signature of the Guide

**Mr. Santosh Chavan**

  
Signature of the HOD

**Dr. L. Rangaiah**

  
Signature of the Principal

**Dr. T. Chandrashekar**


Principal  
RAJARAJESWARI  
COLLEGE OF ENGINEERING  
Ramohalli Cross, Bengaluru-74

**Name of the Examiners:**

1. Dr. R. Gangadhar Reddy
2. Dr. L. Rangaiah

**Signature with date:**

 26/7/22

 26/7/22



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

Jnana Sangama, Belagavi - 590014



*Project report on*

**“MULTI-PURPOSE STUDENT SMART CARD USING RFID  
TECHNOLOGY”**

*submitted in partial fulfilment of the requirement for the award of degree of*

**BACHELOR OF ENGINEERING  
IN  
ELECTRONICS AND COMMUNICATION ENGINEERING**

**Submitted by**

**ANUSHA S**

**ENCHILATRA J**

**PRAVEEN KUMAR N**

**YASHWANTH GOWDA B R**

**1RR18EC008**

**1RR18EC026**

**1RR18EC072**

**1RR18EC130**

**Under the guidance of**

**Dr. D. SOBYA**

**Associate Professor**

**Dept. of ECE**



**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING  
RAJARAJESWARI COLLEGE OF ENGINEERING**

**[Accredited by NBA & NAAC, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]**

**#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru - 560074**

**2021-2022**



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

Jnana Sangama, Belagaum – 590014



**A PROJECT REPORT**

**ON**

**MULTI-PURPOSE STUDENT SMART CARD USING RFID  
TECHNOLOGY**

*Submitted in partial fulfilment of the requirement for the*

*award of degree of*

**BACHELOR OF ENGINEERING**

**IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

*Submitted by*

**ANUSHA S**

**USN:1RR18EC008**

**ENCILATRA J**

**USN: 1RR18EC026**

**PRAVEEN KUMAR N**

**USN:1RR18EC072**

**YASHWANTH GOWDA B R**

**USN: 1RR18EC130**

*Under the guidance of*

**Dr. D. SOBYA**

Associate Professor



**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

**RAJARAJESWARI COLLEGE OF ENGINEERING**

**BENGALURU – 560074**

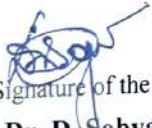
**2021-2022**

**RAJARAJESWARI COLLEGE OF ENGINEERING**  
**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**




**CERTIFICATE**

This is to certify that the project work entitled **"MULTI-PURPOSE STUDENT SMART CARD USING RFID TECHNOLOGY"** is a bonafide work carried out by **ANUSHA S** with **USN: IRR18EC008**, **ENCILATRA J** with **USN: IRR18EC026**, **PRAVEEN KUMAR N** with **USN: IRR18EC072**, **YASHWANTH GOWDA B R** with **USN: IRR18EC130** in partial fulfilment for the award of Bachelor of Engineering in Electronics and Communication Engineering of the Visvesvaraya Technological University, Belagavi during the year 2021-2022. 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. D. Soby**

  
Signature of the HOD  
**Dr. L. Rangaiah**  
**PROFESSOR & HEAD**  
DEPT. OF ELECTRONICS & COMMUNICATION ENG.  
RAJARAJESWARI COLLEGE OF ENGG.  
BENGALURU - 560 074

  
Signature of the Principal  
**Dr. T. Chandrashekar**  
RAJARAJESWARI  
COLLEGE OF ENGINEERING  
Ramohalli Cross, Bengaluru-7  
Signature with date

Name of the Examiners:

1. **Dr. R. Gangadhar Reddy**
2. **Dr. SM Vijaya**

**R. Gangadhar Reddy** 25/7/22

 25.7.22



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**Jnana Sangama, Belagavi – 590018**



**A Project Report on**

**-DESIGN OF WIRELESS EMG MONITORING SYSTEM FOR  
MUSCLE DETECTION ON PARKINSON  
DISEASE-**

**Submitted in partial fulfillment of the requirement for the award of degree of**

**BACHELOR OF ENGINEERING  
IN  
ELECTRONICS AND COMMUNICATION ENGINEERING**

**Submitted by**

**GAGAN N Y**

**(IRR18EC028)**

**GAURAV K M**

**(IRR18EC031)**

**HANSA N R**

**(IRR18EC034)**

**Under the guidance of  
Prof. VANI S BADIGER  
Assistant Professor  
Dept. Of ECE**



**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING  
RAJARAJESWARI COLLEGE OF ENGINEERING**

**[Accredited by NBA & NAAC, affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]  
#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74**

**2021-2022**

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**Jnana Sangama, Belagavi – 590018**



**A Project Report on**

**“DESIGN OF WIRELESS EMG MONITORING SYSTEM  
FOR MUSCLE DETECTION ON PARKINSON  
DISEASE”**

**Submitted in partial fulfilment of the requirement for the award of degree of**

**BACHELOR OF ENGINEERING  
IN  
ELECTRONICS AND COMMUNICATION ENGINEERING**

**Submitted by**

**GAGAN N Y**

**(1RR18EC028)**

**GAURAV K M**

**(1RR18EC031)**

**HAMSA N R**

**(1RR18EC034)**

**Under the guidance of  
Prof. VANI S BADIGER  
Assistant Professor  
Dept. Of ECE**



**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING  
RAJARAJESWARI COLLEGE OF ENGINEERING**

**[Accredited by NBA & NAAC, affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]  
#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74**

**2021-2022**



**RAJARAJESWARI COLLEGE OF ENGINEERING**  
[NBA & NAAC Accredited, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]  
#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74  
**ELECTRONICS & COMMUNICATION ENGINEERING**



**CERTIFICATE**

This is to certify that the project work entitled "**DESIGN OF WIRELESS EMG MONITORING SYSTEM FOR MUSCLE DETECTION ON PARKINSON DISEASE**" is a bonafide work carried out by **GAGANN Y (IRRI8EC028)**, **GAURAV K M (IRRI8EC031)**, **HAMSA N R (IRRI8EC034)** in partial fulfilment for the award of Bachelor of Engineering in Electronics and Communication Engineering of the **Visvesvaraya Technological University, Belagavi** during the year 2021-2022. 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.

Signature of the Guide  
**Prof. Vani S Badiger**

Signature of the HOD

Signature of the Principal

**Dr. L. Rangalah**  
HEAD  
DEPT. OF ELECTRONICS & COMMUNICATION ENG  
RAJARAJESWARI COLLEGE OF ENGG.  
BENGALURU - 560 074

**Dr. T. Chandrashekar**  
Principal  
RAJARAJESWARI  
COLLEGE OF ENGINEERING  
Ramohalli Cross, Bengaluru-74

**External Viva**

**Name of the Examiners:**

**Signature with date:**

1. **Dr. R. Gangadhar Reddy**

**R. Gangadhar Reddy**  
25/7/22

2. **Dr. SM Vijaya.**

**SM Vijaya**  
25/7/22



# Raja Rajeswari College of Engineering

## Department of Electronics and Communication Engineering








ACADEMIC YEAR 2020-2021





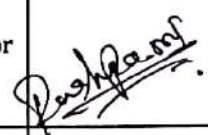




17ECP78- PROJECT WORK

Batch No.	USN of Student	Student Name	Title of the Project	Guide Name	Specialization of guide	Guide's Signature
A1	1RR17EC057	Jeevitha.K.R	Robot for the treatment of communicable diseased patients using AI and ML	Dr. Rangaiah L	Communication systems	
	1RR17EC037	Devika.S				
	1RR17EC158	Meghana.K.R				
	1RR17EC054	Hemanth.M				
A2	1RR17EC156	Rohan Kumar S	Augmented Reality Students ID Card	Dr. Muruganandham A	Image Processing	
	1RR17EC038	Divya D N				
	1RR17EC024	Chaitra R				
	1RR17EC030	Chethana M				
A3	1RR17EC042	G Santosh Kumar	Green way for Ambulance by Automatic Control of Traffic lights	Dr. R Gangadhar Reddy	VLSI & Embedded Systems	
	1RR17EC005	Ananth M Purohit				
	1RR17EC006	Anil Seervi				
	1RR17EC033	Darshan M				
A4	1RR17EC040	Dore Swamy H N	Design of wireless IOT sensor node and platform for detection and alerting system for leakage in drinking water pipeline and water quality.	Dr. Sumitha Manoj	Wireless Sensor Network	
	1RR17EC064	Manoj B				
	1RR17EC025	Chandan B V				
	1RR17EC016	Avinash R				
A5	1RR17EC015	Aswin PV	Smart communication and health monitoring military vaist	Dr. D Sobya	Communication systems	
	1RR17EC002	Abishek M:				
	1RR16EC111	Yashaswini S				
	1RR17EC001	Abhishek Gowda S				
A6	1RR17EC060	Kavyashree S	Pneumonia detection using deep learning	Dr. Vijaya S M	VLSI & Embedded Systems	
	1RR17EC036	Devika R				
	1RR17EC045	Gattu Jishnu				
	1RR17EC047	Gowtham M				
A7	1RR17EC014	Ashwini R	Smart personal protective equipment using raspberry pi	Dr. Bhuvaneswari P	Image Processing	
	1RR17EC023	Chaitra N				
	1RR17EC022	Chaitra J				
	1RR17EC019	Bindu B Gowda M				
A8	1RR17EC026	Chandana. A	CAN controller implementation with message authentication	Prof. Sreepathi V	Network Cyper Security and Cryptography	
	1RR17EC027	Chandana. C				
	1RR17EC039	Divya Shree.M.R				
	1RR17EC043	Gagana Shree. U				





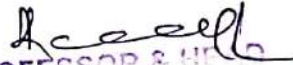
A9	1RR17EC034	Darshan TM	Pot hole detection system using ultrasonic sensor	Prof. Lokesha K	VLSI & Embedded Systems	
	1RR17EC029	Chethan U				
	1RR17EC003	Adithya P Shetty				
A10	1RR17EC044	Gaganarpitha V	Lung cancer detection using ANN and image enhancement	Prof. Sunitha R	Artificial Neural Networks, Digital Image Processing	
	1RR17EC152	Druthi J Pithadia				
	1RR17EC157	Sowmya S				
	1RR17EC161	Rajashree C				
A11	1RR16EC004	Akash	IoT sensor and deep neural networks based wildfire prediction system	Prof. Gireesh HR	IoT & Wireless Sensor	
	1RR16EC009	A.Venu				
	1RR16EC098	Sreekanth.D				
	1RR16EC055	Nayan S J				
A12	1RR17EC018	Bharath C S	A novel model for an automobile emission monitoring and alerting system using IOT	Prof. Santosh Chavan	IoT & Wireless Sensor	
	1RR17EC012	A S Puneeth Kumar				
	1RR16EC067	Pavithra. V				
	1RR17EC155	Chethan N				
A13	1RR15EC089	Vaibhav Sowchi	Facial emotion recognition and speech intelligence system using machine learning	Prof. Santosh G	Digital Image Processing	
	1RR15EC075	R Tilak				
	1RR15EC091	Varun Kumar S L				
	1RR15EC035	Indudhar B K				

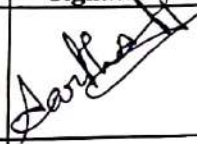







  
**PROFESSOR A. VENU**  
 DEPT. OF ELECTRONICS & COMMUNICATIONS ENGINEERING  
 RAJAJESWAR, COMPLEX IV, 600 099  
 BENGALURU-560 074

Batch No.	USN of Student	Student Name	Title of the Project	Guide Name	Specialization of guide	
B1	1RR17EC087	P.S.Leela kumar	Smart Casket for package conveyance	Prof. Ajay M	Network Security,	
	1RR17EC086	Nitish S				
	1RR17EC089	Pavankumar Reddy S				
	1RR17EC077	Navajith.N				
B2	1RR17EC065	Manoj J Yadav	Usage of Mobile Elements in IoT for Data Aggregation in WSN	Prof. Vani Badigar	IoT & Wireless Sensor Network	
	1RR17EC062	Manish Kumar				
	1RR17EC111	Sadiq.D				
	1RR17EC137	Vaibhau D Morashkar				
B3	1RR17EC114	Samreen taj	IoT Based robotic Farming Systems	Prof.T.Gopinathan	IoT & Wireless Sensor Network	
	1RR17EC095	Prakruthi.L				
	1RR16EC070	Prashanth				
	1RR17EC083	Nishanth				
B4	1RR16EC040	Keerthana S	Manasvita - Pre-detection of Suicidal Tendancies using Neural Networking.	Prof. Haritha K S	Artificial Neural Networks, Digital Image Processing	
	1RR17EC113	Sahana N				
	1RR17EC125	Shradha Suman Jena				
	1RR17EC124	Shradha Damodar				
B5	1RR17EC082	Nisarga.P	IoT Based Automatic Lake CLEANING Andsurveillance Boat	Prof.Pushpa M J	IoT & Wireless Sensor Network	
	1RR17EC069	MEENA KUMARI G				
	1RR17EC073	MONISHA D				
	1RR17EC098	RACHANA HP				
B6	1RR17EC090	Pavithra Kumar	Automatic Cow Milk Extractor	Prof. Chaithanya S	Communication systems	
	1RR17EC094	Pooja S Hugar				
	1RR17EC092	Pooja A				
	1RR17EC063	Manish N				
B7	1RR17EC117	Sanjay K	e-Sight for Visually challenged people	Prof. Deepika j	Image Processing	
	1RR17EC091	Pavithra R				
	1RR17EC093	Pooja M N				
	1RR17EC081	Nikitha N Divakar				
B8	1RR17EC058	K. Sagar	Frequency Reconfigurable Antennas	Dr.A. Muruganandham	Antennas and Wave Propagation	
	1RR17EC061	Mallikarjuna H				
	1RR17EC068	Mayur GR				
	1RR17EC116	Sandeep M				
B9	1RR17EC115	Sandeep	Cloud based automated waste segregator using ML	Dr. Rangaiagh L	Image Processing & Machine Learning	
	1RR17EC119	Sathish S				
	1RR17EC123	Shoiab pasha M D				
	1RR17EC048	Harshitha H				









B10	1RR17EC079	Nayana K R	Smart approach to rain water harvesting	Dr. R Gangadhar Reddy	Sensor and Networks	
	1RR17EC066	Manoj M				
	1RR17EC084	Nithin Kumar Yadav K				
B11	1RR16EC076	Rithushree I	Automatic sanitizer Dispenser and temperature detection	Dr. Sumitha Manoj	Communication systems	
	1RR16EC107	Uzair neuman				
	1RR16EC003	Afshan khannum				
	1RR16EC012	Apoorva D V				

  
**PROFESSOR & HEAD**  
 DEPT. OF ELECTRONICS & COMMUNICATIONS  
 RAJAJESWARAN COLLEGE OF ENGINEERING  
 BENGALURU - 560014

Batch No.	USN of Student	Student Name	Title of the Project	Guide Name	Specialization of guide	Guide's Signature
C1	1RR17EC136	Thanushree K H	LoRa based LPG monitoring and automatic cylinder booking system	Dr.S.R.Aarthi Avanthiga	Digital Electronics & Communication Systems	
	1RR17EC140	Varshitha M S				
	1RR17EC146	Vihara G Shetty				
	1RR17EC150	Yashaswini B D				
C2	1RR17EC051	.Harshitha M	Covid -19 Thermal Screening	Dr. Vijaya S M	VLSI & Image Processing	
	1RR17EC080	Niharika				
	1RR17EC147	Vinay				
	1RR17EC121	Shashank				
C3	1RR17EC134	Tejashwini R	Autonomous army robot for border surveillance	Prof.P.Bhuvaneswari	Image Processing	
	1RR17EC139	Varshini M				
	1RR17EC141	Varshitha Mv				
	1RR17EC151	Yuvaraj R				
C4	1RR17EC074	Nagarjun	Driver Drowsiness Detection system	Prof.Abubakkar Sithik	VLSI & Image Processing	
	RR17EC085	Nitin Kumar Pb				
	1RR17EC131	Sumanth Sk				
	1RR17EC135	Tejesh P				
C5	1RR17EC104	Ranjitha M	Detection of Earthquake and tsunami using GSM network	Prof.Anudeep.K	Digital Electronics & Communication Systems	
	1RR17EC109	Roopa M				
	1RR17EC129	Spandan S Gangannavar				
	1RR17EC145	Vidyashree K V				
C6	1RR17EC103	Rakshita N	Fake Indian currency note Recognition	Prof. Sunitha R	Medical Electronics	
	1RR17EC110	Roopashri				
	1RR17EC126	Sneha G				
	1RR17EC133	Swathi K				
C7	1RR16TE004	Arindam Saha	Underwater wireless communication using visible light implemented using AI	Prof.Abhilasha C.P	Digital Electronics & Communication Systems	
	1RR16TE006	Ashwini R				
	1RR16TE012	Kainath Sultana				
	1RR16TE020	Neha				
C8	1RR17EC138	Vaishnavi S	Children security and Tracking with an alert system using GSM and GPS Technology	Prof.Namitha S	Digital Electronics & Communication Systems	
	1RR17EC142	Varuni L N				
	1RR17EC127	Sonika M R				
	1RR17EC120	Sharath K				



C9	1RR15EC031	Harshltha R	Smart device for fuel theft prevention and accident Detection along with Authentication access for drivers in vehicles Team Members	Prof.Ojaswini	Digital Electronics & Communication Systems	
	1RR17EC402	Arshiya K				
	1RR16EC039	Kavya V				
	1RR16EC016	Bhumireddy Hemanth Reddy				
C10	1RR17EC162	Sanjay S	Fog-assisted secure healthcare data aggregation scheme in IoT-enabled WSN	Prof.Meghana H.N	Digital Electronics & Communication Systems	
	1RR17EC148	Vinutha J				
	1RR17EC410	Shivaprasad R				
	1RR17EC159	Ganga G V				
C11	1RR17EC130	Suhas GC	Efficient protocol for secure file sharing in cloud	Prof.Karthikeyan R	Digital Electronics & Communication Systems	
	1RR18EC404	Siddraju				
	1RR18EC401	Nayana				
	1RR17EC411	Sirish Kumar				
C12	1RR17EC153	Gayathri D	Color based vegetables and fruits cutter and sorter bot using aurdino	Prof.Vinodha G	Digital Electronics & Communication Systems	
	1RR17EC154	Bindu Sree.M				
	RR17EC004	Aishwarya G.R				
	1RR17EC007	Anu Suresh				
C13	1RR16EC400	Adrsh G N	Smart device for authentication access using finger print and RFID	Prof.M.Suresh	Image Processing	
	1RR16EC063	Pavan H K				
	RR15EC004	Akash P				
	1RR15EC047	Manoj S				

  
**PROFESSOR & HEAD**  
 DEPT. OF ELECTRONICS & COMMUNICATION ENG  
 RAJAJESWARI COLLEGE OF ENGS  
 BEINGALURU-560074



# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Jnana Sangama, Belagavi - 590018



Project Report on

## "CLOUD BASED AUTOMATED WASTE SEGREGATOR USING ML TECHNIQUES"

Submitted in partial fulfillment of the requirement for the award of degree of

**BACHELOR OF ENGINEERING IN  
ELECTRONICS AND COMMUNICATION ENGINEERING**

Submitted by

SANDEEP M	(1RR17EC116)
SANDEEP	(1RR17EC115)
SATHISH S	(1RR17EC119)
SHOAIB PASHA MD	(1RR17EC123)

Under the guidance of  
Dr. Rangaiah L.  
Professor & HOD,  
Dept. of ECE.



**DEPT. OF ELECTRONICS & COMMUNICATION ENGINEERING  
RAJARAJESWARI COLLEGE OF ENGINEERING**

[Accredited by NBA & NAAC, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

#14, Ramohalli Cross, Mysore Road, Kumbalgaru, Bengaluru-74

2020-2021



# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Jnana Sangama, Belagavi – 590018



Project Report on

## **“CLOUD BASED AUTOMATED WASTE SEGREGATOR USING ML TECHNIQUES”**

Submitted in partial fulfillment of the requirement for the award of degree of

**BACHELOR OF ENGINEERING  
IN  
ELECTRONICS AND COMMUNICATION ENGINEERING**

Submitted by

<b>SANDEEP M</b>	<b>(1RR17EC116)</b>
<b>SANDEEP</b>	<b>(1RR17EC115)</b>
<b>SATHISH S</b>	<b>(1RR17EC119)</b>
<b>SHOAIB PASHA MD</b>	<b>(1RR17EC123)</b>

Under the guidance of

**Dr. Rangaiah L  
Professor & HOD,  
Dept. of ECE.**



**DEPT. OF ELECTRONICS & COMMUNICATION ENGINEERING  
RAJARAJESWARI COLLEGE OF ENGINEERING**

[Accredited by NBA & NAAC, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

#14, Ramohalli Cross, Mysore Road, Kumbalgodu, Bengaluru-74  
2020-2021

# RAJARAJESWARI COLLEGE OF ENGINEERING

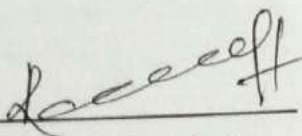
[Accredited by NBA & NAAC, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]  
#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

## DEPT. OF ELECTRONICS & COMMUNICATION ENGINEERING

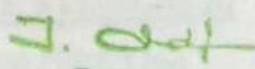


### CERTIFICATE

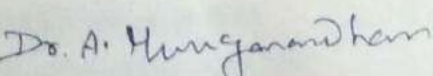
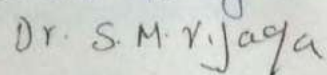
This is to certify that the project work entitled "**CLOUD BASED AUTOMATED WASTE SEGREGATOR USING ML TECHNIQUES**" is a bonafide work carried out by **SANDEEP M (IRR17EC116), SANDEEP (IRR17EC115), SATHISH S(IRR17EC119), SHOAIB PASHA MD (IRR17EC123)** in partial fulfilment for the award of **Bachelor of Engineering in Electronics and Communication Engineering** of the Visvesvaraya Technological University, Belagavi during the year 2020-2021. It is certified that all corrections and suggestions indicated for internal assessment have been incorporated in the report and deposited in the departmental library. The project report has been approved as it satisfies the academic requirements.

  
Signature of the Guide  
**Dr. L. Rangaiah**

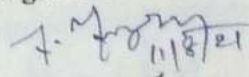
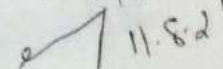
  
Signature of the HOD  
**Dr. L. Rangaiah**  
**PROFESSOR & HEAD**  
DEPT. OF ELECTRONICS & COMMUNICATION ENG  
RAJARAJESWARI COLLEGE OF ENGG.  
BENGALURU - 560 074

  
Signature of the Principal  
**Dr. T. Chandrashekar**

Name of the Examiners:

1. 
2. 

Signature with date:

  
11/8/21  
  
11.8.21



# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

JnanaSangama, Belagavi - 590018



A Project Report on

## "MANASVITA-Pre-Detection of Suicidal Tendencies"

Submitted in partial fulfilment of the requirement for the award of degree  
of

**BACHELOR OF ENGINEERING**

**IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

Submitted by

KEERTHANA S	(1RR16EC040)
SHRADHA SUMAN JENA	(1RR17EC125)
SHRADHA DAMODAR	(1RR17EC124)
SAHANA N	(1RR17EC113)

Under the guidance of

**Prof. HARITHA K S**

Asst.

Professor

Dept. of ECE



**DEPT. ELECTRONICS & COMMUNICATION ENGINEERING**

**RAJARAJESWARI COLLEGE OF ENGINEERING**

[Accredited by NBA & NAAC, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

2020-2021



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**  
**JnanaSangama, Belagavi – 590018**



A Project Report on

**“MANASVITA-Pre-Detection of Suicidal  
Tendencies using Neural Networks”**

Submitted in partial fulfilment of the requirement for the award of degree of

**BACHELOR OF ENGINEERING**

**IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

Submitted by

**KEERTHANA S (1RR16EC040)**

**SHRADHA SUMAN JENA (1RR17EC125)**

**SHRADHA DAMODAR (1RR17EC124)**

**SAHANA N (1RR17EC113)**

Under the guidance of

**Prof. HARITHA K S**

**Asst. Professor**

**Dept. of ECE**



**DEPT. ELECTRONICS & COMMUNICATION ENGINEERING**

**RAJARAJESWARI COLLEGE OF ENGINEERING**

**[Accredited by NBA & NAAC, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]**

**#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74**

**2020-2021**




**RAJARAJESWARI COLLEGE OF ENGINEERING**  
[NBA & NAAC Accredited, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]  
#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

## **ELECTRONICS & COMMUNICATION ENGINEERING**

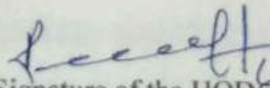


### **CERTIFICATE**

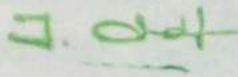
This is to certified that the project work entitled **"MANASVITA- Pre-Detection of Suicidal Tendencies using Neural Networks"** is a bonafide work carried out by **KEERTHANA S (IRR16EC040), SHRADHA SUMAN JENA(IRR17EC125), SHRADHA DAMODAR(IRR17EC124), SAHANA N(IRR17EC113)** in partial fulfilment for the award of **Bachelor of Engineering in Electronics and Communication Engineering** of the Visvesvaraya Technological University, Belagavi during the year 2020-2021. 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.

  
Signature of the Guide

**Prof. Haritha K S**

  
Signature of the HOD

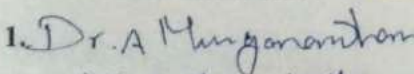
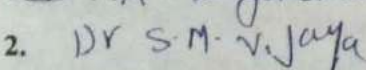
**Dr. L. Rangaiah**

  
Signature of the Principal

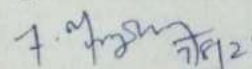

**Dr. T. Chandrashekhar**

**PROFESSOR & HEAD**  
DEPT. OF ELECTRONICS & COMMUNICATION ENG.  
RAJARAJESWARI COLLEGE OF ENGG  
BENGALURU - 560 074

Name of the Examiners:

1.  Dr. A. Mungarantam
2.  Dr. S. M. V. Jaya

Signature with date:

 7/7/21  




**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**JnanaSangama, Belagavi - 590018**



Project Report On

**"FREQUENCY RECONFIGURABLE ANTENNA USING CST STUDIO"**

*Submitted in partial fulfilment of the requirement for the award of degree of*

**BACHELOR OF ENGINEERING**

**IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

Submitted by

**K SAGAR [USN: 1RR17EC058]**

**MALLIKARJUNA H [USN: 1RR17EC061]**

**MAYUR G R [USN: 1RR17EC068]**

**VAIBHAV D MORASKAR [USN: 1RR17EC137]**

Under the guidance of

**DR. A. MURUGANANDHAM**

Professor, Dept. Of ECE



**DEPARTMENT OF ELECTRONICS AND COMMUNICATION  
ENGINEERING**

**RAJARAJESWARI COLLEGE OF ENGINEERING**

**[NBA & NAAC Accredited, Affiliated to VTU, Belagavi, Approved by AICTE,  
New Delhi]**

**#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74  
2020-2021**



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**  
**JnanaSangama, Belagavi – 590018**



Project Report On

**“FREQUENCY RECONFIGURABLE ANTENNA USING CST STUDIO”**

Submitted in partial fulfilment of the requirement for the award of degree of

**BACHELOR OF ENGINEERING**

**IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

Submitted by

**K SAGAR [USN: 1RR17EC058]**

**MALLIKARJUNA H [USN: 1RR17EC061]**

**MAYUR G R [USN: 1RR17EC068]**

**VAIBHAV D MORASKAR [USN: 1RR17EC137]**

Under the guidance of

**DR. A. MURUGANANDHAM**

**Professor, Dept. Of ECE**



**DEPARTMENT OF ELECTRONICS AND COMMUNICATION  
ENGINEERING**

**RAJARAJESWARI COLLEGE OF ENGINEERING**

**[NBA & NAAC Accredited, Affiliated to VTU, Belagavi, Approved by AICTE,  
New Delhi]**

**#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74  
2020-2021**

# RAJARAJESWARI COLLEGE OF ENGINEERING

[NBA & NAAC Accredited, Affiliated to VTU, Belagavi, Approved by AICTE,  
New Delhi]

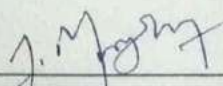
#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

## DEPT. OF ELECTRONICS & COMMUNICATION ENGINEERING

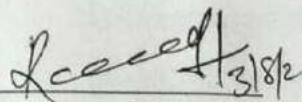


### CERTIFICATE

This is to certify that the project work entitled **"FREQUENCY RECONFIGURABLE ANTENNA USING CST STUDIO"** is a bona fide work carried out by **MALLIKARJUNA H (USN: 1RR17EC061), K SAGAR (USN: 1RR17EC058), MAYUR GR (USN: 1RR17EC068), VAIBHAV D MORASKAR (USN: 1RR17EC137)** in partial fulfilment for the award of Bachelor of Engineering in Electronics and Communication Engineering of the Visvesvaraya Technological University, Belagavi during the year 2020-2021. 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 the respect of seminar work prescribed for the said degree.

  
Signature of Guide

Dr. A. Muruganandhan

  
Signature of HOD

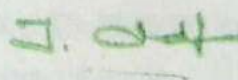
Dr. L. Rangaiah

**PROFESSOR & HEAD**

DEPT. OF ELECTRONICS & COMMUNICATION ENG

RAJARAJESWARI COLLEGE OF ENGG.

BENGALURU - 560 074

  
Signature of Principal

Dr. T. Chandrashekar

Principal

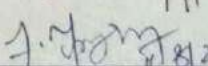
RAJARAJESWARI

COLLEGE OF ENGINEERING

Ramohalli Cross, Bengaluru-74

NAME of Examiner  
1. Dr. Vijaya SM

2. Dr. A. Muruganandhan

  
11/8/21



VISVESVARAYA TECHNOLOGICAL UNIVERSITY

JNANA SANGAMA, BELAGAVI-590018



Project Report on

"CHILDREN SECURITY AND TRACKING WITH AN ALERT SYSTEM USING GSM AND GPS  
TECHNOLOGY"

Submitted in partial fulfilment of the requirement for the award of degree of BACHELOR OF  
ENGINEERING

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

Submitted by

SHARATH K (1RR17EC120)

SONIKA M R (1RR17EC127)

VAISHNAVI S (1RR17EC138)

VARUNI L N (1RR17EC142)

Under the guidance of

SANTOSH CHAVAN  
Assistant Professor  
Department of ECE



DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING  
RAJARAJESWARI COLLEGE  
OF ENGINEERING

[Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi, Accredited to NBA & NAACI] #14, Ramohalli

Cross, Kumbalagodu, Mysore Road, Bengaluru-560074

2020-2021



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**JNANA SANGAMA, BELAGAVI-590018**



**Project Report on**

**“CHILDREN SECURITY AND TRACKING WITH AN ALERT SYSTEM USING  
GSM AND GPS TECHNOLOGY”**

**Submitted in partial fulfilment of the requirement for the award of degree of**

**BACHELOR OF ENGINEERING**

**IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

**Submitted by**

**SHARATH K (1RR17EC120)**

**SONIKA M R (1RR17EC127)**

**VAISHNAVI S (1RR17EC138)**

**VARUNI L N (1RR17EC142)**

**Under the guidance of**

**SANTOSH CHAVAN**

**Assistant Professor**

**Department of ECE**



**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

**RAJARAJESWARI COLLEGE OF ENGINEERING**

**[Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi, Accredited to NBA & NAAC]**

**#14, Ramohalli Cross, Kumbalagodu, Mysore Road, Bengaluru-560074**

**2020-2021**



# RAJARAJESWARI COLLEGE OF ENGINEERING

[NBA & NAAC Accredited, Affiliated to VTU, Belagavi, Approved by AICTE,  
New Delhi]

#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

## DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



### CERTIFICATE

This is to certify that the project work entitled "**CHILDREN SECURITY AND TRACKING WITH AN ALERT SYSTEM USING GSM AND GPS TECHNOLOGY**" is a bonafide work carried out by **SHARATH K (IRR17EC120), SONIKA M R (IRR17EC127), VAISHNAVI S (IRR17EC138), VARUNI L N (IRR17EC142)** in partial fulfilment for the award of Bachelor of Engineering in Electronics and Communication Engineering of the Visvesvaraya Technological University, Belagavi during the year 2020-2021. 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.

Signature of the Guide

Santosh Chavan

Signature of the HOD

Dr. J. Rangaiah  
PROFESSOR & HEAD

Signature of the Principal

Dr. T. Chandrashekar

Name of the Examiners:

1. Dr. J. M. Vijay
2. Dr. R. Gangadhar

Signature with date:

7/2-8-21



# **VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**Jnana Sangama, Belagavi – 590018**



**Project Report on**

## **“STRATEGIES TO DETECT COVID-19 AND MEASURES TO PREVENT IT”**

**Submitted in partial fulfilment of the requirement for the award of degree of**

### **BACHELOR OF ENGINEERING IN ELECTRONICS AND COMMUNICATION ENGINEERING**

**Submitted by**

<b>HARSHITHA M</b>	<b>(IRR17EC051)</b>
<b>NIHAARIKA M AMRUTHA</b>	<b>(IRR17EC080)</b>
<b>SHASHANK H S</b>	<b>(IRR17EC121)</b>
<b>VINAY R</b>	<b>(IRR17EC147)</b>

**Under the guidance of**

**Dr. VIJAYA S M**

**Associate Professor, Dept of ECE**



**DEPT. ELECTRONICS & COMMUNICATION ENGINEERING  
RAJARAJESWARI COLLEGE OF ENGINEERING**

**[Accredited by NBA & NAAC, affiliated to VTU, Belagavi, Approved by AICTE,  
New Delhi]**

**#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74  
2020-2021**



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**  
Jnana Sangama, Belagavi – 590018



Project Report on

**“STRATEGIES TO DETECT COVID-19 AND  
MEASURES TO PREVENT IT”**

Submitted in partial fulfilment of the requirement for the award of degree of

**BACHELOR OF ENGINEERING  
IN  
ELECTRONICS AND COMMUNICATION ENGINEERING**

Submitted by

<b>HARSHITHA M</b>	<b>(IRR17EC051)</b>
<b>NIHAARIKA M AMRUTHA</b>	<b>(IRR17EC080)</b>
<b>SHASHANK H S</b>	<b>(IRR17EC121)</b>
<b>VINAY R</b>	<b>(IRR17EC147)</b>

Under the guidance of

**Dr. VIJAYA S M**

**Associate Professor, Dept of ECE**



**DEPT. ELECTRONICS & COMMUNICATION ENGINEERING  
RAJARAJESWARI COLLEGE OF ENGINEERING**

[Accredited by NBA & NAAC, affiliated to VTU, Belagavi, Approved by AICTE,  
New Delhi]

#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74  
2020-2021



**#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74**

7. *[Signature]* 11/8/21  
✓ 11.8.21





# Raja Rajeswari College of Engineering

Department of Electronics and Communication Engineering









ACADEMIC YEAR 2019-2020



15ECP78- PROJECT WORK

Batch No.	USN	Name Of The Students	Guide Name	Guide's Specialization	Title of the Project	Guide's Signature
1	1RR16EC010	Ankitha M R	Dr.L.Rangaiah	Embedded Communication systems	Assistive device for blind, deaf and dumb	
	1RR16EC026	GV Divyanjali				
	1RR16EC060	Nisha M				
	1RR16EC017	Bhupalam Geetanjali				
2	1RR16EC013	Archana S R	Dr. A Muruganandham	Image Processing using machine learning	Detection of behavioural Changes using image processing and machine learning	
	1RR16EC006	Akula Nagasree Sowmya				
	1RR16EC053	Namrata Tripathi				
	1RR16EC054	Nandhini A				
3	1RR16EC056	Nayana T R	Prof.Matsa Satyasreenivas	VLSI & Embedded Systems	Vision system for autonomous driving cars using deep learning	
	1RR16EC032	Harshitha T				
	1RR16EC001	Abhishek B U				
	1RR16EC046	M.S Poornima				
4	1RR16EC011	Anusha S Gowda	Prof.Supriya N	Image Processing	Haze removal system using image processing in MATLAB	
	1RR16EC019	Chaitra S				
	1RR16EC012	Apoorva D V				
	1RR16EC045	Likitha Y				
5	1RR16EC058	Nikitha S	Prof.Darwin Britto R	Sensor network	Gesture control using Z-force sensors	
	1RR15EC036	Jyothi				
	1RR15EC030	Harshitha C				
	1RR16EC069	Pooja S H				
6	1RR16EC066	Pavithra T M	Prof.Namitha S	VLSI & Embedded Systems	Obstacle avoidance system for visually impaired using FPGA	
	1RR14EC070	Praveen Sagar S R				
	1RR15EC052	Mohammed Sanaulla Khan				
	1RR14EC055	Mitta Jithamanasa				
7	1RR16EC027	Gunashree B R	Prof. Vijaya SM	Image Processing	Breast tumor detection using 3TP $\mu$ -net deep convolutional Neural network and prioritized condition aggregation	
	1RR16EC038	Kavana H K				
	1RR16EC020	Chadan.H				
	1RR16EC052	Meghana M				




8	1RR16EC031	Harshitha M H	Prof. V. Sreepathi	Network Cyber Security and Cryptography	CNNs for automatic glaucoma detection using machine learning	
	1RR16EC061	Niveditha S M				
	1RR16EC008	Anand K H				
	1RR16EC049	Manojkumar C				
9	1RR16EC068	Pooja P S	Prof.P.Bhuvaneswari	VLSI & Embedded Systems	Automatic tracking of stray out animals from sanctuaries and forest reserves using raspberry pi and image processing	
	1RR16EC071	Priyanka B J				
	1RR16EC074	Rakshitha N				
	1RR16EC092	Swatha. G.P				
10	1RR16EC059	Nisha K	Prof. R. Sunitha	Medical Image Processing	Enhancement of DNA, micro array image using morphological technology	
	1RR16EC018	Brinda B R				
	1RR16EC033	Impa C				
	1RR16EC050	Megha S Naik				
11	1RR16EC042	Kushal R Nadiger	Prof. Lokesh K	Wireless Sensor Network	Anytime Medicine	
	1RR16EC002	Abhishek H S				
	1RR16EC005	Akash S V				
	1RR16EC080	Samarath Aithalu				
12	1RR16EC051	Meghana A Kalyankar	Prof. Vani SB	Digital Image Processing	A Power efficient hybrid data aggregation scheme for IoT	
	1RR15EC098	Bhavya R				
	1RR16EC030	Harshitha K V				
	1RR16EC044	Lavanya K C				
13	1RR15EC022	Dharini S. K	Prof. Santhosh.G	Communication systems	A silkworm growth monitoring smart sericulture using IoT and image processing	
	1RR15EC024	Gagan				
	1RR15EC004	Akash				
	1RR15EC047	Manoj.S				
14	1RR16EC014	Ashwini A S	Prof. Santhosh Chavan	IoT and wireless sensor Network	IoT deployed automatic movable smart road divider to control traffic	
	1RR16EC015	Ashwini M				
	1RR16EC021	Chandana S				
	1RR16EC023	Dhanusha.P				
15	1RR16EC034	Jithendra V	Prof. Ajay M	Satellite and wireless communication	Marine navigation using the satellite and wireless communication	
	1RR16EC035	Karthik M R				
	1RR16EC037	Kaushik K				
	1RR16EC062	Pavan C				



16	1RR16EC063	Pavan H K	Prof. Jyothi AP	Satellite and wireless communication	Real time tracking and health monitoring of soldiers using WSN	JAD
	1RR16EC065	Pavan Kumar P				
	1RR16EC041	Kiran H B				
	1RR16EC048	Manjunath P				
17	1RR16TE025	Sandhya K.V	Prof. Pushpa M J	wireless communication	Security operations with wireless secured communication and tracking device	Pushpa.mj
	1RR16TE002	Amogha				
	1RR16TE012	Kainath Sulthana				
18	1RR16TE031	Varaprasad	Prof. Haritha K S	Embedded IoT Systems	Smart village as a model for swach bharat based on embedded IoT	Haritha
	1RR16TE018	Namratha R.				
	1RR16TE017	Manjushree K.				
19	1RR16TE007	Chandana P. G.	Prof. Suresh M	Image Processing	Efficient eye blink detection method for disabled: assisting system for paralyzed	Suresh
	1RR16TE019	Navya Shree K.				
	1RR16TE026	Sindhu .S				
	1RR16TE030	Thanushree .P				
20	1RR16TE013	Lohith C.	Prof.S R AarthiAvanthiga	Sensor Network	Anti piracy screening system using automated infrared transmission screen system and steganography techniques	Aarthi
	1RR16TE016	Mahima S.				
	1RR16TE022	Rani B. P.				
	1RR16TE010	Effseebha J.				
21	1RR16TE001	Aishwarya R.	Prof. Aruna S	Antenna Systems	Compact broadband circularly polarized microstrip patch antenna with single feed	Aruna
	1RR16TE003	Anusha S.				
22	1RR16EC413	Prakash Hegde	Prof. Deepika J	Image Processing	Infusion pump with nebulizer unit for health care	Deepika
	1RR16EC412	Nehith N				
	1RR15EC095	Vipin Padman N				
	1RR15EC038	Nithin K S				
23	1RR16EC096	Sowmyashree R Y	Dr. L. Rangaiah	Image processing and IoT	Smart detection in defence using image processing and IoT	Rangaiah
	1RR16EC093	Smitha J				
	1RR16EC104	Sumanth V				
	1RR16EC416	Punith N				
24	1RR16EC097	Sree Reddy Manasa	Prof.Prabhakar	Speech Processing	Speech recognition in high noisy environment	Prabhakar
	1RR16EC084	Shabnam				
	1RR16EC077	Saba Banu				
	1RR16EC113	Yeshwanth Gowda R				



25	1RR16EC085	Sharmila Bai B	Prof.Mallikarjun Reddy	VLSI & Embedded Systems	Resynchronization method to transform synchronous circuit to asynchronous circuits using cadence tools	<u>Mallikarjun</u>
	1RR16EC086	Sharmila G				
	1RR16EC094	Sneha L				
	1RR16EC075	Rashmitha G S				
26	1RR16EC099	Sri Harsha A V	Prof.Venketesh R	Image Processing	Automatic accident detection and smart rescue system	<u>Vekey</u>
	1RR16EC115	Abhishek B S				
	1RR16EC073	Rahul Suresh D				
	1RR16EC110	Vikas R Y				
27	1RR16EC101	Srivatsa Vaasista R G	Prof.Venkata Reddy	IoT and Wireless network	Implementation of IoT in thermo electric generation module for driving and monitoring	<u>Venkat Reddy</u>
	1RR16EC079	Saiprasad Pujari				
	1RR16EC028	Guruswami				
	1RR17EC406	Manoj kumar S K				
28	1RR16EC424	Shoba N	Prof.Sumana P S	Image Processing	Cervical cancer based on digital Image processing	<u>Sumana</u>
	1RR16EC417	Radhika S				
	1RR16EC408	Megashree. C				
29	1RR16EC109	Vasudha K H	Prof.Yeshoda M	Image Processing	Lung cancer detection using CT image processing	<u>Yeshoda</u>
	1RR16EC095	Soundarya S				
	1RR16EC091	Shruthi S Nayak				
	1RR16EC106	Usharani A				
30	1RR17EC401	Archana R	Prof.Lakshmi Narasimha	Image Processing using Python	Automatic detection of glaucoma of no-structural using python	<u>Lakshmi Narasimha</u>
	1RR17EC400	Akshatha.B				
	1RR16EC102	Srushti B R				
	1RR15EC088	Tejaswini S				
31	1RR16EC105	Swaroop R	Prof. P. Bhuvaneshwari	IoT and Wireless Sensor network	Smart indoor vertical farming monitoring using IoT	<u>P. Bhuvaneshwari</u>
	1RR16EC081	Sandeep S				
	1RR16EC072	Priyanka M.G				
	1RR16EC100	Sridhar R				
32	1RR16EC078	Sachin M D	Prof. R. Sunitha	Image Processing	Unusual human activity analysis by using image processing	<u>Sunitha</u>
	1RR16EC087	Shashikiran A.S				
	1RR16EC082	Sanjay B R				
	1RR16EC090	Shreyas R Kalkur				
33	1YD16EC010	Puneeth G	Prof. Loksha	Image Processing	Eye tracking based secured money transaction using multi account ATM card.	<u>Loksha</u>
	1YD16EC015	Sony M				
	1YD16EC001	Akshay K M				

  
**PROFESSOR & HEAD**  
 DEPT. OF ELECTRONICS & COMMUNICATION ENG  
 RAJARAJESWARI COLLEGE OF ENGG  
 BENGALURU - 560 074



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**JnanaSangama, Belagavi – 590018**



**Project Report on**

**“SMART INDOOR VERTICAL FARMING MONITORING  
USING IoT”**

**Submitted in partial fulfilment of the requirement for the award of degree of**

**BACHELOR OF ENGINEERING  
IN  
ELECTRONICS AND COMMUNICATION ENGINEERING**

**Submitted by**

**PRIYANKA MG(1RR16EC072)**

**SANDEEP S(1RR16EC081)**

**SRIDHAR R (1RR16EC100)**

**SWAROOP R (1RR16EC105)**

**Under the guidance of**

**Dr.P.Bhuvaneswari  
Associate Professor**



**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING  
RAJARAJESWARI COLLEGE OF ENGINEERING**

**[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU, Belagavi,**

**Approved by AICTE, New Delhi]**

**#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74**

**2019-20**



**RAJARAJESWARI COLLEGE OF ENGINEERING**  
[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU, Belagavi,  
Approved by AICTE, New Delhi]  
#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

**DEPARTMENT OF ELECTRONICS & COMMUNICATION  
ENGINEERING**

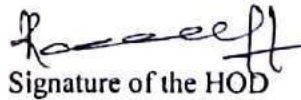


**CERTIFICATE**

This is to certify that the project work entitled " SMART INDOOR VERTICAL FARMING MONITORING USING IoT "is a bonafide work carried out by PRIYANKA MG (1RR16EC072), SANDEEP S (1RR15EC081), SRIDHAR R (1RR15EC100), SWAROOP R (1RR15EC105) in partial fulfilment for the award of Bachelor of Engineering in Electronics and Communication Engineering of the Visvesvaraya Technological University, Belgaum during the year 2019-20. 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.

  
Signature of the Guide

**Dr. P. Bhuvaneswari**

  
Signature of the HOD

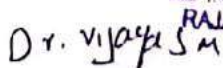
**Dr. L. Rangaiah**

DEPT. OF ELECTRONICS & COMMUNICATION  
RAJARAJESWARI COLLEGE OF ENGINEERING  
BENGALURU - 560 074


  
Signature of the Principal


**Dr. T. Chandrashekar**

Principal

Examiner 1:  **Dr. Vijay Kumar**

Signature & date:  **Dr. T. Chandrashekar**  
RAJARAJESWARI COLLEGE OF ENGINEERING  
Ramohalli Cross, Bengaluru-74

Examiner 2:  **Dr. R. Gangadhar**

Signature & date: 

# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

JNANA SANGAMA, BELAGAVI-590018



## AN PROJECT REPORT ON

### “BREAST CANCER DETECTION USING DEEP LEARNING ALGORITHMS”

SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF  
DEGREE OF

#### BACHELOR OF ENGINEERING IN ELECTRONICS AND COMMUNICATION ENGINEERING

*Submitted By*

CHANDAN H	[USN: 1RR16EC020]
GUNASHREE B.R	[USN: 1RR16EC027]
KAVANA H.K	[USN: 1RR16EC038]
MEGHANA M	[USN: 1RR16EC052]

*Under the guidance of*

**Dr. S M Vijaya**

Associate professor



#### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING RAJARAJESWARI COLLEGE OF ENGINEERING

[ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi, Accredited to NBA & NAAC]  
#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

Bengaluru-560074

2019-2020



# RAJARAJESWARI COLLEGE OF ENGINEERING

[ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi, Accredited to NBA & NAAC]

#14, Ramohalli cross, Mysore road, Kumbalagodu, Bengaluru-560074

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



### CERTIFICATE

This is to certify that Project work entitled "BREAST CANCER DETECTION USING DEEP LEARNING ALGORITHMS" is a bonafide work carried out by CHANDAN H (USN: IRR16EC020), GUNASHREE BR (USN: IRR16EC027), KAVANA HK (USN: IRR16EC038), MEGHANA M (USN: IRR16EC052), in partial fulfilment for the award of Bachelor of Engineering in Electronics and Communication Engineering of the Visvesvaraya Technological University, Belagavi during the academic year 2019-20. It is certified that corrections/suggestions indicated by 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. S.M. Vijaya  
Associate Professor  
Dept. of ECE, RRCE

Signature of the HOD

Dr. L. Rangaiah  
Professor & Head  
Dept. of ECE, RRCE  
DEPT OF ELECTRONICS & COMMUNICATION ENGINEERING  
RAJARAJESWARI COLLEGE  
BENGALURU - 560 074

External Viva

Signature of the Principal

Dr. T. Chandrashekar  
Principal, RRCE  
RAJARAJESWARI  
COLLEGE OF ENGINEERING  
Ramohalli Cross, Bengaluru-74

Signature with date:

Name of the Examiners

1. Dr. Rangaiah L
2. Dr. A. Munegowdham

# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Jnana Sangama, Belagavi – 590018



## PROJECT REPORT ON

### *"MACHINE LEARNING FOR THE DETECTION OF DIABETIC RETINOPATHY"*

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF  
DEGREE OF

BACHELOR OF ENGINEERING  
IN  
ELECTRONICS AND COMMUNICATION ENGINEERING

*Submitted by*

MANOJ KUMAR S K [USN:1RR17EC406]  
SRIVATSA VAASISTA R G [USN:1RR16EC101]  
SAIPRASAD PUJARI [USN:1RR16EC079]  
GURUSWAMY C G [USN:1RR16EC028]

*Under the guidance of*

**Dr. D. Soby**  
Associate Professor



DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING  
**RAJARAJESWARI COLLEGE OF ENGINEERING**

[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

**BENGALURU-560074**

**2019-2020**



# RAJARAJESWARI COLLEGE OF ENGINEERING

[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]


#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

## DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING




### CERTIFICATE


This is to certify that the Project work entitled "MACHINE LEARNING FOR THE DETECTION OF DIABETIC RETINOPATHY" is a bonafide work carried out by MANOJ KUMAR SK (USN:1RR17EC406), SRIVASTAVAASISTA RG (USN:1RR16EC101), SAIPRASAD PUJARI (USN:1RR17EC079), GURUSWAMY CG (USN:1RR15EC028) in partial fulfillment for the award of Bachelor of Engineering in Electronics and Communication Engineering of the Visvesvaraya Technological University, Belgaum during the year 2019 - 20. 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. D. Soby**  
Associate Professor

  
Signature of the HOD

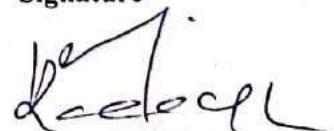
**Dr. L. Rangaiah**  
PROFESSOR & HEAD  
DEPT. OF ELECTRONICS & COMMUNICATION  
RAJARAJESWARI COLLEGE OF ENGG.  
BENGALURU - 560 074  
External Viva

  
Signature of the Principal  
**Dr. T. Chandrashekar**  
Principal  
RAJARAJESWARI  
COLLEGE OF ENGINEERING  
Ramohalli Cross, Bengaluru-74

#### Examiner Name

1. Dr. Vijaya SM
2. Dr. Rangaiah L

#### Signature



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**JNANA SANGAMA, BELAGAVI-590018**



*Project Report on*

**ENHANCEMENT OF DNA MICROARRAY IMAGE USING CNN METHOD**

*Submitted in partial fulfilment of the requirement for the award of the degree of*

**BACHELOR OF ENGINEERING**

**IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

*Submitted By*

**BRINDA B R**  
**[USN: 1RR16EC018]**

**IMPA C**  
**[USN: 1RR16EC033]**

**MEGHA S NAIK**  
**[USN: 1RR16EC050]**

**NISHA K**  
**[USN: 1RR16EC059]**

*Under the guidance of*

**SUNITHA R**

**Assistant professor,**

**Department of ECE, RRCE, Bangalore**



**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**  
**RAJARAJESWARI COLLEGE OF ENGINEERING**

**[ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi, Accredited to NBA & NAAC]**

**#14, Ramohalli Cross, Kumbalagodu, Mysore Road, Bengaluru-560074**



# RAJARAJESWARI COLLEGE OF ENGINEERING

[ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi, Accredited to NBA & NAAC]

#14, Ramohalli cross, Kumbalagodu, Mysore road, Bengaluru-560074

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



## CERTIFICATE

This is to certify that the project work entitled "ENHANCEMENT OF DNA MICROARRAY IMAGE USING CNN METHOD" is a bonafide work carried out by BRINDA B R (USN: IRR16EC018), IMPA C (USN: IRR16EC033), MEGHA S NAIK (USN: IRR16EC050), NISHA K (USN: IRR16EC059), in partial fulfilment for the award of Bachelor of Engineering in Electronics and Communication Engineering of the Visvesvaraya Technological University, Belagavi during the academic year 2019-20. It is certified that corrections/suggestions indicated by 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

Sunitha. R

Signature of the HOD

Dr. L. Rangaiah  
**PROFESSOR & HEAD**  
DEPT. OF ELECTRONICS & COMMUNICATION ENG  
RAJARAJESWARI COLLEGE OF ENG.  
BENGALURU - 560 074

External Viva

Signature of the Principal

Dr. T. Chandrashekar  
Principal  
RAJARAJESWARI  
COLLEGE OF ENGINEERING  
Ramohalli Cross, Bengaluru-74

Name of the Examiners:

1. Dr. Rangaiah L
2. Dr. vijaya SM

Signature with Date:

# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Jnana Sangama, Belagavi – 590018



## PROJECT REPORT ON

### "INFUSION PUMP WITH NEBULIZER UNIT FOR HEALTH CARE"

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF  
DEGREE OF

BACHELOR OF ENGINEERING  
IN  
ELECTRONICS AND COMMUNICATION ENGINEERING

*Submitted by*

PRAKASH HEGDE [USN:1RR16EC413]

VIPIN PADMAN M [USN:1RR15EC095]

NEHITH N [USN:1RR16EC412]

*Under the guidance of*

**Prof. DEEPIKA J**  
Assistant Professor



DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING  
**RAJARAJESWARI COLLEGE OF ENGINEERING**

[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

BENGALURU-560074

2019-2020



# RAJARAJESWARI COLLEGE OF ENGINEERING

[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

## DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



### CERTIFICATE

This is to certified that the Project work entitled "INFUSION PUMP WITH NEBULIZER UNIT FOR HEALTH CARE" is a bonafide work carried out by PRAKASH HEGDE (USN:1RR16EC413), VIPIN PADMAN M (USN:1RR15EC095), NEHITH N (USN:1RR16EC412), in partial fulfillment for the award of Bachelor of Engineering in Electronics and Communication Engineering of the Visvesvaraya Technological University, Belgaum during the year 2019-20. 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

Prof. Deepika J

Dr. L. Rangaiah  
PROFESSOR & HEAD

DEPT. OF ELECTRONICS & COMMUNICATION ENG.  
RAJARAJESWARI COLLEGE OF ENGG.  
BENGALURU - 560 074

External Viva

Signature of the Principal

Dr. T. Chandrashekar

Principal  
RAJARAJESWARI  
COLLEGE OF ENGINEERING  
Ramohalli Cross, Bengaluru-74

Examiner Name

1. Dr. Rangaiah L
2. Dr. R. Gangadhar Reddy

Signature



# RajaRajeswari College of Engineering

## Department of Electronics and Communication Engineering








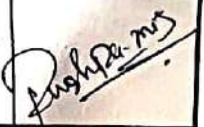

ACADEMIC YEAR 2018-2019

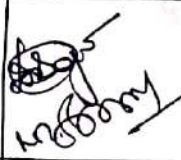
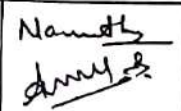
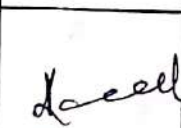
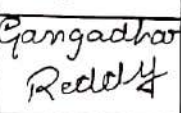
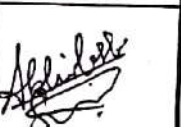


VIIIITH SEMESTER (A&B)

Batch No.	USN of Student	Student Name	Title of the Project	Guide Name	Specialization of guide	Guide's Signature
A1	1RR15EC045	Likitha S	Smart Water heater	Dr. Rangaiah L	Embedded systems	
	1RR15EC055	Nadiya M				
	1RR15EC058	Navyashree N.Rai				
	1RR15EC060	Nikitha S Shetty				
A2	1RR15EC010	Bharath Yadav	Assistive Technology for Impairments	Dr.S R.AarthiAvanthiga	Embedded systems	
	1RR15EC017	Chethan N				
	1RR15EC021	Devaraj.K				
	1RR15EC042	Kishore Kumar M				
A3	1RR15EC013	Chaitra N	Detection of Brain Tumor from MRI Images using Machinelearning	Prof.Vijaya S M	Image Processing	
	1RR15EC019	R.Chitra				
	1RR15EC043	Latha R E				
	1RR15EC053	Monica B				
A4	1RR15EC039	Karthik V	Automatic Door Access using Face Recognition	Prof.Sreepathi V Prof.Chaithanya S	Image Processing	
	1RR15EC050	Meghana S				
	1RR15EC056	Nagadhar Sai Kanderi				
	1RR15EC061	Niriksha				
A5	1RR15EC011	Bhumika N	Smart Farming for Crop and Leaf Protection	Prof.P.Bhuvaneswari Prof.Lakshminarashima	Communication systems	
	1RR15EC057	Navya.J				
	1RR15EC059	Nayana.T.M				
A6	1RR15EC003	Aishwarya B Nadageri	Denoising cDNA Microarray Images using filter techniques and convolutional Neural Network	Prof.Sunitha R Prof.Deepika J	VLSI & Embedded Systems	
	1RR15EC005	Apoorva Hegde				
	1RR15EC006	Arya S Das				
	1RR15EC014	Chandan J V				
A7	1RR15EC002	Aishwarya N S	Real time Design to Circumvent Air Traffic Control Based on WSN & IOT	Prof.Jyothi Prof Yeshoda.M	WSN & IOT	
	1RR15EC037	Jyoti R				
	1RR15EC048	Meenakshi K				
	1RR16EC428	Sushma V				
A8	1RR15EC009	Balasubramanian D	Spy Robot controlled by DTMF along with metal detection and obstacle Detection	Prof.Sumithamanoj Prof.Sumana B S	Network Cyper Security and Cryptography	
	1RR15EC020	Deepika G				
	1RR15EC062	Nishigandha J S				



A9	1RR15EC007	Ashwini J	Fire Detection in Surveillance video using Deep Learning	Prof.Prabhakar R	VLSI & Embedded Systems	
	1RR15EC027	GuruPrasad B R				
	1RR15EC054	N.Kirankumar				
	1RR15EC038	Nithin K.S				
A10	1RR15EC026	Gowthami G	Intelligent Wireless Sensor Communication and Efficient Power Utilization for green building using IoT	Prof.Vani S Badiger Prof.Venkatareddy	WSN & IOT	
	1RR15EC034	Hitha R				
	1RR15EC040	Kavya S				
	1RR15EC018	Chinmayee M R				
A11	1RR15EC065	Niveditha M	Security Surveillance Rover with Soldier Health Monitoring using Image Processing	Prof.Santhosh Chavan Prof.Mallikarjunareddy	IoT & Wireless Sensor	
	1RR15EC073	Priyanka B.U				
	1RR15EC074	Priyanka.T.Petkar				
	1RR16EC409	Meghana K				
A12	1RR15EC081	Saki Banda Ravali	Congestion Control and Collision Avoidance in vehicular Networks	Prof.Lokesha K	IoT & Wireless Sensor	
	1RR15EC086	Sushmitha S				
	1RR14EC011	Arshiya Fathima				
	1RR15EC015	Chethankumar A D				
A13	1RR15EC066	Pooja B.J	Smart Unusual Event Detection using Low Resolution Camera for Enhanced Security	Prof.Santhosh.G	Digital Image Processing	
	1RR15EC067	Pooja S S				
	1RR15EC076	Rashmitha S				
	1RR15EC087	Tanuja A N				
A14	1RR15EC008	Ranjana B	Anti Collision and voice controlled Robot with Robotic Arm using Arduino	Prof.Ajay M	IoT & Wireless Sensor	
	1RR15EC070	Prajwal.P				
	1RR15EC071	Prathap Kumar K B				
A15	1RR15EC068	Prabhanjan R	Vision Based Boat Height Prediction to Avoid Crash and stream flow analysis to safeguard boats using IoT	Prof.Haritha K S	IoT & Wireless Sensor Network	
	1RR15EC077	Revathi S				
	1RR15EC078	Roshan Anthon Pereria				
	1RR15EC092	Vasant S B				
A16	1RR15EC082	Sanjay R	Forest monitoring using Wireless Sensor Network	Prof.Pushpa M.J	IoT & Wireless Sensor Network	
	1RR14EC038	Ganesh Monay				
	1RR16EC404	Divakar Reddy B				
	1RR16EC418	Rakesh L				
A17	1RR15EC064	S.Nithish Reddy	Automatic Ration Dispensing system	Prof.Darwinbritto R	Embedded systems	
	1RR16EC406	Manohara K				
	1RR16EC407	Manoj.K				
	1RR16EC415	Prithvi Raj G S				

A18	1RR15EC063	Nithin.N	Accident Prevention smart car based on IoT	Dr.D.Sobya Prof.M.Suresh	IoT & Wireless Sensor Network	
	1RR15EC079	Ruchitha Kumar				
	1RR15EC097	Yashas S				
	1RR16EC420	Ranjitha R				
A19	1RR15EC090	Varun C N	Automatic LPG Gas Booking and Leakage detection system	Prof.Namitha S Prof.Aruna S	Communication systems	
	1RR16EC402	Chennabasavanagoudapatil				
	1RR16EC425	Siddalingesha S Karikanti				
A20	1RR15EC069	Pragathi P	IoT Enabled smart Garden monitoring	Dr.L.Rangaiah	IoT & Wireless Sensor Network	
	1RR15EC080	S.KruthikaKumari				
	1RR15EC084	Shilpavasunaik				
	1RR15EC094	Vijetha Shravya				
A21	1RR15EC025	Gopi.K	Charge Restoration using Adiabatic logic in low power digital circuits	Dr.R.Gangadhar Reddy Prof.Supriya N	Communication systems	
	1RR15EC033	Harshitha S				
	1RR15EC044	Lavanya B				
A22	1RR15EC083	Sharath G	Railway safety management	Prof.Abhilasha Prof.Satyasreenivas	Communication systems	
	1RR16EC405	Harsha Varhan V K				
	1RR16EC423	Sharath Kumar S R				
	1RR15EC096	VybhavGowda B.S				

  
**PROFESSOR & HEAD**  
 DEPT. OF ELECTRONICS & COMMUNICATIONS  
 RAJARAJESWARI COLLEGE OF ENGINEERING  
 BENGALURU - 560 074



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**JNANA SANGAMA, BELAGAVI-590018**



**A Project Report**

**On**

**"CHARGE RESTORATION USING ADIABATIC  
LOGIC IN LOW POWER DIGITAL CIRCUITS"**

*Submitted in the partial fulfilment of the requirement for the award  
of degree of*

**BACHELOR OF ENGINEERING**

**IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

*Submitted By*

**GOPI K. USN: 1RR15EC025**

**HARSHITHA S. USN: 1RR15EC033**

**LAVANYA B. USN: 1RR15EC044**

*Under the guidance of*

**DR. R. GANGADHAR REDDY**

**Associate professor (ECE)**



**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

**RAJARAJESWARI COLLEGE OF ENGINEERING**

**2018-2019**



# RAJARAJESWARI COLLEGE OF ENGINEERING

[ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

#14 Ramohalli cross, Kumbalagodu, Mysore road, Bengaluru-560074

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



## CERTIFICATE

This is to certify that Project work entitled **"CHARGE RESTORATION USING ADIABATIC LOGIC IN LOW POWER DIGITAL CIRCUITS"** is a bonafide work carried out by **GOPI K.** with **USN: 1RR15EC025**, **HARSHITHA S.** with **USN: 1RR15EC033**, **LAVANYA B.** with **USN: 1RR15EC044** in partial fulfillment for the award of Bachelor of Engineering in Electronics and Communication engineering of the Visvesvaraya Technological University, Belagavi during the academic year 2018-19. It is certified that corrections/suggestions indicated by 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.

*R. Gangadhar Reddy*  
18/05/2019

Signature of Guide

**DR. R. Gangadhar Reddy**

*L. Rangiah*  
Signature of HOD

**PROFESSOR & HEAD**  
Dept. of Electronics & Communication Engg  
**RAJARAJESWARI COLLEGE OF ENGG**  
BENGALURU - 560 074

**External Examiner**

*R. Balakrishna*

Signature of Principal

**Dr. R. Balakrishna**

1. *Dr. L. Rangiah*

*L. Rangiah* 12/6/19

2. *Dr. Mallikarjun*

*Mallikarjun*  
12/6/19



# **VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

Jnana sangama , Belagavi - 590018



**Project Report**

**On**

## **“ CONGESTION CONTROL AND COLLISION AVOIDANCE IN VEHICULAR AREA NETWORKS”**

*Submitted in partial fulfillment of the requirement for the award of degree of*

**BACHELOR OF ENGINEERING IN  
ELECTRONICS AND COMMUNICATION ENGINEERING**

*Submitted by*

<b>ARSHIYA FATHIMA</b>	<b>[USN: 1RR14EC011]</b>
<b>CHETHAN KUMAR A D</b>	<b>[USN:1RR15EC015]</b>
<b>SAKI BANDA RAVALI</b>	<b>[USN:1RR15EC081]</b>
<b>SUSHMITHA S</b>	<b>[USN:1RR15EC086]</b>

*Under the Guidance of*

**Prof. LOKESHA K**

Assistant Professor,

**Dept of ECE, RRCE, Bangalore.**



**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

**RAJARAJESWARI COLLEGE OF ENGINEERING**

[NBA & NAAC Accredited ,Affiliated to VTUs, Belagavi, Approved by AICTE , New Delhi]

#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bangalore-560074

2018-19



# RAJARAJESWARI COLLEGE OF ENGINEERING

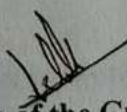
[NBA & NAAC Accredited, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]  
#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bangalore-560074

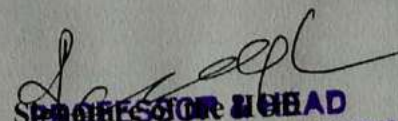
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGG

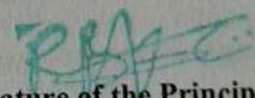


## CERTIFICATE

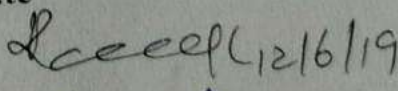
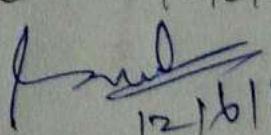
This is to certify that the evaluation of project on "CONGESTION CONTROL AND COLLISION AVOIDANCE IN VEHICULAR AREA NETWORKS" is a bonafide work carried out by ARSHIYA FATHIMA (USN:1RR14EC011), CHETHAN KUMAR A D (USN:1RR15EC015), SAKI BANDA RAVALI (USN:1RR15EC081), SUSHMITHA S (USN:1RR15EC086) in partial fulfilment for the award of Bachelor of Engineering in Electronics and Communication Engineering of Visvesvaraya Technological university, Belgaum during the year 2018-2019. 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 requirement in respect of project work prescribed for the said degree.

  
Signature of the Guide  
Prof. Lokesh k

  
PROFESSOR & HEAD  
DEPT. OF ELECTRONICS & COMMUNICATION ENG  
RAJARAJESWARI COLLEGE OF ENGG.  
BENGALURU - 560 074  
Dr. L. Ranganah

  
Signature of the Principal  
Dr .R.Balakrishna

Signature of the Examiners with Date

1. Dr. L. Ranganah  12/6/19
2. Dr. MALLANATHAN. P.  12/6/19



# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama", Belagavi-590018



Project Report

On

**"SMART WATER HEATER"**

Submitted in partial fulfilment of the requirement for the award of degree of

BACHELOR OF ENGINEERING

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

Submitted by

LIKITHA S

[USN:1RR15EC045]

NADIYA M

[USN:1RR15EC055]

NAVYASHREE N RAI

[USN:1RR15EC058]

NIKITHA S. SHETTY

[USN:1RR15EC060]

Under the Guidance of

**Dr. L Rangaiah**  
**Professor & Head**



DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RAJARAJESWARI COLLEGE OF ENGINEERING

[NBA & NAAC Accredited, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bangalore-560074,

2018-19



# RAJARAJESWARI COLLEGE OF ENGINEERING

[NBA & NAAC Accredited, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bangalore-560074

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



### CERTIFICATE

This is to certify that the evaluation of project report titled **"SMART WATER HEATER"** is a bonafide work carried out by **Likitha S (1RR15EC045)**, **Nadiya M (1RR15EC055)**, **Navyashree N Rai (1RR15EC058)**, **Nikitha S Shetty (1RR15EC060)** in partial fulfilment for the award of **"Bachelor of Engineering"** in Electronics and Communication Engineering of the **Visvesvaraya Technological University**, Belagavi during the year 2018-19. It is certified that all correction/suggestions indicated for the 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 in respect of the project work prescribed for the said degree.

**Signature of Guide**  
Dr. L. Rangaiah  
Professor & Head  
Dept of ECE, RRCE

**Signature of HOD**  
Dr. L. Rangaiah  
Professor & Head  
Dept of ECE, RRCE

**Signature of Principal**  
Dr. R. Balakrishna  
Principal, RRCE

#### Signature of the examiner with Date

1. Dr. L. Rangaiah
2. Dr. MALLIKARJUN



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**JNANA SANGAMA, BELAGAVI-590018**



**Project Report on**

**“FIRE DETECTION IN SURVEILLANCE VIDEO USING  
DEEP LEARNING”**

*Submitted in partial fulfilment of the requirement for the award of the degree of*

**BACHELOR OF ENGINEERING**

**IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

*Submitted BY*

**ASHWINI J [USN: 1RR15EC007]**

**N KIRAN KUMAR [USN: 1RR15EC054]**

**GURU PRASAD BR [USN: 1RR15EC027]**

*Under the guidance of*

**SUNITHA R**

*Associate professor,*

*Department of ECE, RRCE, Bangalore*



**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING  
RAJARAJESWARI COLLEGE OF ENGINEERING**

**[ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi, Accredited to  
NBA & NAAC]**

**#14, Ramohalli Cross, Kumbalagodu, Mysore Road, Bengaluru-560074**



# RAJARAJESWARI COLLEGE OF ENGINEERING

[ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi, Accredited to NBA & NAAC]

#14, Ramohalli cross, Kumbalagodu, Mysore road, Bengaluru-560074

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



### CERTIFICATE

This is to certify that the project work entitled "**FIRE DETECTION IN SURVEILLANCE VIDEO USING DEEP LEARNING**" is a bonafide work carried out by **ASHWINI J(USN:1RR15EC007)**, **N KIRAN KUMAR(1RR15EC054)**, **GURU PRASAD BR(1RR15EC027)**, in partial fulfilment for the award of **Bachelor of Engineering** in **Electronics and Communication Engineering** of the **Visvesvaraya Technological University**, Belagavi during the academic year 2018-19. It is certified that corrections/suggestions indicated by 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

Sunitha. R

**PROFESSOR & HEAD**  
**DEPT. OF ELECTRONICS & COMMUNICATION ENG.**  
**RAJARAJESWARI COLLEGE OF ENGG.**  
**BENGALURU-560074**  
**HOD**  
Dr. L. Rangaiah

Signature of the Principal

Dr. R. Balakrishna

### External Viva

Name of the Examiners:

1. Dr. L. Rangaiah
2. Dr. MALLIKARJUN

Signature with Date:



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**Jnana Sangama, Belagavi – 590018**



**PROJECT REPORT ON**

**“VISION BASED BOAT HEIGHT PREDICTION TO AVOID  
CRASH AND STREAM FLOW RATE ANALYSIS TO  
SAFEGUARD BOATS USING IOT”**

***SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF  
DEGREE OF***

**BACHELOR OF ENGINEERING  
IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

*Submitted by*

**PRABHANJAN R [USN:1RR15EC068]**

**REVATHI S [USN:1RR15EC077]**

**ROSHAN ANTHON PEREIRA [USN:1RR15EC078]**

**VASANT SHAMBHANNA BHOVIVADDAR [USN:1RR15EC092]**

*Under the guidance of*

**Prof. Haritha K S**

**Assistant Professor**



**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

**RAJARAJESWARI COLLEGE OF ENGINEERING**

**[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]**

**#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74**

**BENGALURU-560074**

**2018-2019**



# RAJARAJESWARI COLLEGE OF ENGINEERING

[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

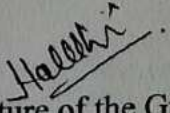
#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

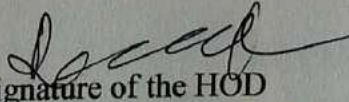
## DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

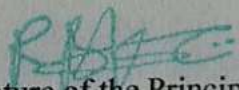


### CERTIFICATE

This is to certified that the Project work entitled "**VISION BASED BOAT HEIGHT PREDICTION TO AVOID CRASH AND STREAM FLOW RATE ANALYSIS TO SAFEGUARD BOATS USING IOT**" is a bonafide work carried out by PRABHANJAN R (USN:1RR15EC068), REVATHI S (USN:1RR15EC077), ROSHAN ANTHON PEREIRA (USN:1RR15EC078), VASANT SHAMBHANNA BHOVIVADDAR (USN:1RR15EC092), in partial fulfillment for the award of **Bachelor of Engineering in Electronics and Communication Engineering** of the **Visvesvaraya Technological University, Belgaum** during the year 2018- 19. 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.

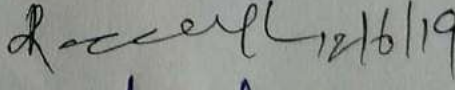
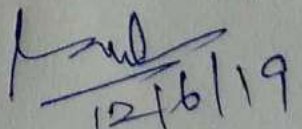
  
Signature of the Guide  
**Prof. Haritha K S**

  
Signature of the HOD  
**PROFESSOR & HEAD**  
**Dr. L. Ranganiah**  
DEPT. OF ELECTRONICS & COMMUNICATION ENG  
RAJARAJESWARI COLLEGE OF ENGG.  
BENGALURU - 560 074  
**External Viva**

  
Signature of the Principal  
**Dr. R. Balakrishna**

Examiner Name

Signature

1. Dr. L. Ranganiah  12/6/19
2. Dr. MALLIKARJUNY  12/6/19



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**Jnana Sangama, Belagavi – 590018**



**A PROJECT REPORT**

*On*

**IOT BASED HEALTH MONITORING AND  
TRACKING SYSTEM FOR SOLDIERS**

*Submitted in partial fulfillment of the requirement for the  
award of degree of*

**BACHELOR OF ENGINEERING  
IN  
ELECTRONICS AND COMMUNICATION ENGINEERING**

*Submitted by,*

<b>GIRISH N</b>	<b>(USN: 1RR14EC407)</b>
<b>RAJENDRA ILAGER</b>	<b>(USN: 1RR14EC413)</b>
<b>SALMANKHAN B T</b>	<b>(USN: 1RR14EC415)</b>
<b>VASUDEV BHAVIKATTI</b>	<b>(USN: 1RR14EC421)</b>

*Under the guidance of*

**Mrs. SUMITHA MANOJ**

**Assistant Professor**



**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING  
RAJARAJESWARI COLLEGE OF ENGINEERING**

[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

**#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74**

**2017-2018**



# RAJARAJESWARI COLLEGE OF ENGINEERING

[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

## DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



## CERTIFICATE

This is to certify that the Project work entitled **"IOT BASED HEALTH MONITORING AND TRACKING SYSTEM FOR SOLDIERS"** is a bonafide work carried out by **VASUDEV BHAVIKATTI (USN: 1RR14EC421)** in partial fulfillment for the award of **Bachelor of Engineering in Electronics and Communication Engineering** of the **Visvesvaraya Technological University, Belgaum** 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 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. Sumitha Manoj**

Asst. Prof., Dept. of ECE

Signature of the HOD

**Dr. L. Rangaiah**

Professor & Head

Dept. of ECE

**PROFESSOR & HEAD**

Dept. of Electronics & Communication Eng

**RAJARAJESWARI COLLEGE OF ENGG**

**BENGALURU - 560 074**

Signature of the Principal

**Dr. R. Balakrishna**

Principal, RRCE

### External Viva-Voce

Name of the Examiners

1. **Dr. M. A. L. Manoj**

2. ....

Signature with date

**15/6/19**



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**Jnana Sangama, Belagavi – 590018**



**A PROJECT REPORT**

*ON*

**GSM BASED DIGITAL FUEL METER AND  
FUEL THEFT DETECTION USING ARDUINO  
BOARD**

*SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD  
OF DEGREE OF*

**BACHELOR OF ENGINEERING  
IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

*Submitted by*

**BALASUBRAHMANYA H V [USN: 1RR14EC018]     DILIP S KUMAR [USN: 1RR14EC035]**

*Under the guidance of*

**Mrs. P BHUVANESHWARI**

**Associate Professor**



**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

**RAJARAJESWARI COLLEGE OF ENGINEERING**

[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

**#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74**

**BENGALURU-560074**

**2017-2018**



# RAJARAJESWARI COLLEGE OF ENGINEERING

[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

## DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



## CERTIFICATE

This is to certify that the Project work entitled **"GSM BASED DIGITAL FUEL METER AND FUEL THEFT DETECTION USING ARDUINO BOARD"** is a bona fide work carried out by **BALASUBRAHMANYA H V** (USN: 1RR14EC018), **DILIP S KUMAR** (USN: 1RR14EC035), in partial fulfillment for the award of **Bachelor of Engineering in Electronics and Communication Engineering** of the **Visvesvaraya Technological University, Belgaum** 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 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

**Prof. P Bhuvaneshwari**

Signature of the HOD

**Dr. L. Rangaiah**

Signature of the Principal

**Dr. R. Balakrishna**

**External Viva**

Examiner Name

1. **DR. MALURAVAN. PY**
- 2.

Signature

  
13/6/19



# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Jnana Sangama, Belgaum – 590014



A PROJECT REPORT ON

## **“Architecture for T Flip –Flop Using Quantum Dot Cellular Automata”**

*Submitted in partial fulfillment of the requirements  
for the award of the degree of*

**BACHELOR OF ENGINEERING**

*in*

**ELECTRONICS AND COMMUNICATION ENGINEERING**

*By*

**GOKULESH.G (1RR13EC017)**

Under the Guidance of

**MR. M.SATYASREENIVAS**

Assistant Professor,

Department of ECE, RRCE, Bangalore.



**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

**RAJARAJESWARI COLLEGE OF ENGINEERING**

(Affiliated to VTU, Belagavi & Approved by AICTE, New Delhi)

**BENGALURU-560074**

**2018**

**RAJARAJESWARI COLLEGE OF ENGINEERING**



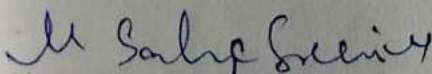
[ISO Certified 9000:2008, Affiliated to VTU, Belgaum, Approved by AICTE, New Delhi]  
#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

## DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

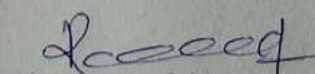


### CERTIFICATE

This is to certify that the project work entitled "**Architecture for T flip-flop using Quantum Dot Cellular Automata**" is a bonafide work carried out by **Gokulesh G:1RR13EC038** in partial fulfillment for the award of **Bachelor of Engineering in Electronics and Communication Engineering** of the **Visvesvaraya Technological University, Belgaum**, 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 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

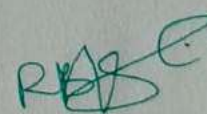
MR. M.SATYASREENIVAS

  
Signature of the HOD

Dr. L RANGAIAH

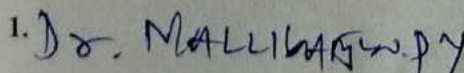
**PROFESSOR & HEAD**

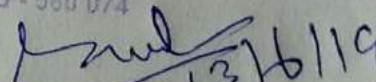
Dept. of Electronics & Communication Eng  
RAJARAJESWARI COLLEGE OF ENGG  
BENGALURU - 560 074

  
Signature of the Principal

Dr. R BALAKRISHNA

External Examiner

1.   
2.

  
13/6/19



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**Jnana Sangama, Belagavi – 590018**



**A PROJECT REPORT**

**ON**

**“DEVELOPMENT OF AN AGRIBOT FOR DISEASE  
DETECTION IN PLANTS AND AUTOMATED  
AGRICULTURE”**

*SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD  
OF DEGREE OF*

**BACHELOR OF ENGINEERING  
IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

*Submitted by*

**SHIVANANDA B D [USN: 1RR15EC417]**

*Under the guidance of*

**Mrs. S M Vijaya  
Associate Professor**



**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

**RAJARAJESWARI COLLEGE OF ENGINEERING**

[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

**#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74**

**BENGALURU-560074**

**2017-2018**



# RAJARAJESWARI COLLEGE OF ENGINEERING

[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

## DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



### CERTIFICATE

This is to certify that the Project work entitled **"DEVELOPMENT OF AN AGRIBOT FOR DISEASE DETECTION IN PLANTS & AUTOMATED AGRICULTURE"** is a bonafide work carried out by Shivananda B D (USN:1RR15EC417), in partial fulfillment for the award of **Bachelor of Engineering in Electronics and Communication Engineering** of the **Visvesvaraya Technological University, Belgaum** 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 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  
**Prof. S M Vijaya**

Signature of the HOD  
**PROFESSOR & HEAD**  
**Dr. L. Rangaiah**  
Dept. of Electronics & Communication Engg  
**RAJARAJESWARI COLLEGE OF ENGG**  
BENGALURU - 560 074  
External Viva - Voice

Signature of the Principal  
**Dr. R. Balakrishna**

Examiner Name

1. **Dr. M. A. L. K. S. W. P.**

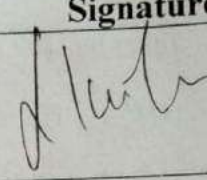
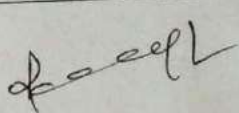
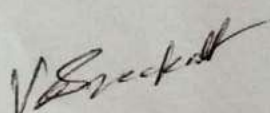
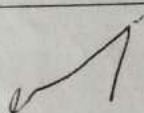

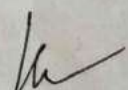
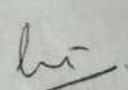
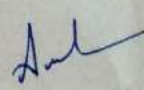

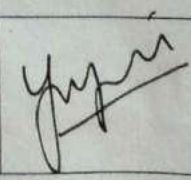
2.

Signature

**13/6/19**



**RAJARAJESWARI COLLEGE OF ENGINEERING**  
**DEPT. OF ELECTRONICS AND COMMUNICATION ENGINEERING**  
**VIII<sup>th</sup> Semester Project Batches ECE – A : 2016-17**


B. No	USN Nos	Name of the Students	Name of the Guide	Signature
1	1RR13EC056 1RR13EC048 1RR13EC050 1RR13EC045	Pruthvi Raj K Param Jain Prajwal V N Nithin R	Dr. L Swarna Jyothi	
2	1RR13EC060 1RR13EC032 1RR13EC028 1RR13EC062	Raghunath N Karan kumar V M Jagadish Ramaryadhya N	Dr. L. Rangaiah	
3	1RR13EC044 <del>1RR13EC025</del> 1RR13EC049 1RR13EC030	Nikhil R <del>Nirish M Hegde</del> Pavan Ms Jenu S L	Prof. V. Sreepathi	
4	1RR13EC042 1RR13EC054 1RR13EC057 1RR13EC059	Namitha R P Priyanka L Purnashree S Radhika V Jaju	Prof. S. M. Vijaya	
5	1RR13EC034 1RR13EC035 1RR13EC037 1RR13EC039	Keerthi H S Kiran B Patil Maithri U K Shetty Mandhara G	Prof. P. Bhuvaneswari	
6	1RR13EC009 1RR13EC036 1RR13EC040 1RR13EC053	Chanagouda Patil Kumar M Hittinalli Manjunath P Praveen K M	Prof. B.B. S. Kumar	
7	1RR13EC011 1RR13EC012 1RR13EC015 1RR13EC019	Chethan Darshan B Dhananjai Sk Harshith Kaumar M	Prof. Sunitha. R	
8	1RR13EC003 1RR13EC006 1RR13EC033 1RR13EC058	Anjana U S M Bimbitha Swarna Gowri Kavyashree B Rachana A S	Prof. Aruna. S	
9	1RR13EC020 1RR13EC016 1RR13EC013 1RR13EC008	Harshitha L Divya C Deeksha P Naik Chaitra.K	Prof. Lokesha. K	
10	1RR13EC052 1RR13EC022 1RR13EC026 1RR13EC029	Pravalika Harshitha N Ishwarya S Jayalakshmi K V	Prof. Saroja Maralabhavi	



ECB-A : 2016-17

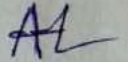
12. IRR13EC004 Azra Tabassum  
IRR13EC021 Harshitha. P

Sunitha R

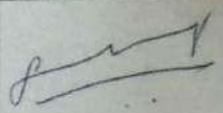


13. IRR13EC005 Balaji Kv  
IRR13EC031 KM Balaji

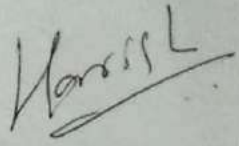
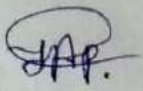
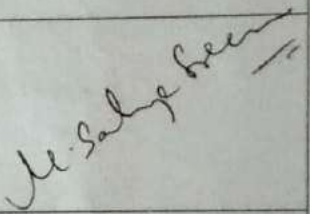
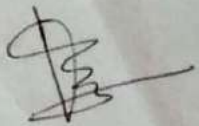
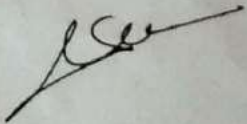
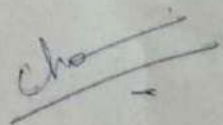
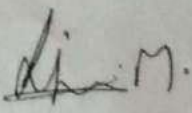
Aruna S



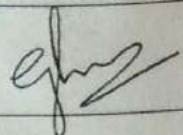
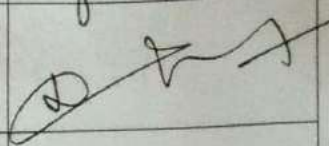

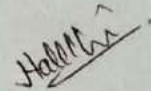
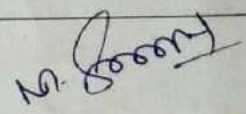
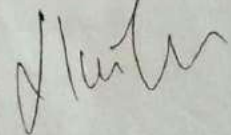
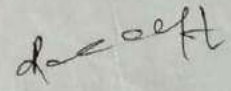
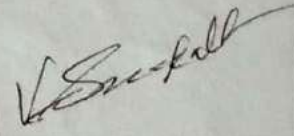
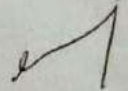



11	1RR13EC024 1RR13EC051 1RR13EC014 1RR13EC010	Hemavathi K G Prathima V Deepashree R Chandana S	Prof. Sumitha Manoj	
----	--	---	---------------------	---

### VIII<sup>th</sup> Semester Project Batches ECE - B : 2016-17

B. No	USN Nos	Name of the Students	Name of the Guide	Signature
1	1RR14EC403 1RR11EC009 1RR13EC070 1RR11EC425	Chaitra S Hiremath Deepa M R S M Tejaswini Vijayalakshmi A	Prof. Harish. N.J	
2	1RR14EC409 1RR13EC072 1RR13EC079 1RR14EC418	Kavya M Sahana P Shruthi G Sunitha M C	Prof. Jyothi A P	
3	1RR13EC094 1RR13EC088 1RR13EC097 1RR11EC047	Varsha K Sushmitha A Vidyashree M Suma B	Prof. M . S Sreenivas	
4	1RR13EC065 1RR13EC067 1RR14EC419 1RR14EC411	Rekha S Roopa N Swathi M <b>Manasa D</b>	Prof. Vani. S. Badiger	
5	1RR13EC082 1RR13EC083 1RR13EC076 1RR13EC085	Soumya A Pattar Spoorthi H R Shashikala H K <b>Suchitha V</b>	Prof. Santosh Chavan	
6	1RR13EC086 1RR13EC068 1RR13EC084 1RR13EC087	Suma P Roopashree k Srujana B K Suma G	Prof. Chaithanya. S	
7	1RR13EC098 1RR13EC404 1RR14EC402	Vinay kumar G Deepak <b>Bharath D R</b>	Prof. Ajay M	



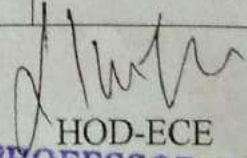
8	1RR13EC066 1RR13EC071	Rohith M V Sachin S	Prof. Santhosh . G	
9	1RR13EC100 1RR13EC096	Vinuthraj N B Venugopal S P	Prof. Darwin Britto. R	
10	1RR13EC095 1RR13EC078 1RR13EC089 1RR13EC090	Vedavathi P S Shrilekha S Sushmitha S Tanuja R	Prof. Pushpa. M. J	
11	1RR13EC093 1RR13EC102 1RR13EC081 1RR13EC064	Varsha A U Ashwini R Sneha S M Ravi chandran.G	Prof. Haritha. K. Sivaraman	
12	1RR13EC074 1RR13EC077	Santhosh Kumar S Shreyas V	Prof. M Suresh	
13	1RR12EC034 1RR13EC408 1RR13EC007	Pavan Simha K <b>Kiran N B</b> Chaitra K N	Dr. L. Swarna Jyothi	
14	1RR12EC023 1RR13EC099 1RR12EC042 1RR12EC028	Koushik D Vinay Raj N Rajagopal V Naveen Kumar S	Dr. L. Rangaiah	
15	1RR13EC069 1RR14EC406 1RR14EC410 1RR13EC073	<b>S Bal Raju Reddy</b> <b>Divakar C</b> <b>Kiran Kumar N M</b> Sankeerth B G	Prof. V. Sreepathi	
16	1RR13EC080 1RR13EC075	Shubham Sharma S Shashidhar R	Prof. S. M. Vijaya	
17	1RR14EC412 1RR12EC008 1RR14EC414	Manjunatha G Arshad K P Rakesh N	Prof. P. Bhuvaneswari	

Project coordinators

Dr. L. Rangaiah

Prof. S M Vijaya

Prof. B B S Kumar

  
HOD-ECE  
**PROFESSOR & HEAD**  
Dept. of Electronics & Communication Engg  
**RAJARAJESWARI COLLEGE OF ENGINEERING**  
BENGALURU - 560 074



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**Jnana Sangama, Belagavi – 590018**



**A PROJECT REPORT**

*ON*

**SMART SOLAR POWER GENERATION  
USING MPPT**

*SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE*

*AWARD OF DEGREE OF*

**BACHELOR OF ENGINEERING**

*IN*

**ELECTRONICS AND COMMUNICATION ENGINEERING**

*Submitted by*

**JAGADEESHA K (1RR13EC028)**

**KARAN KUMAR G M (1RR13EC032)**

**RAGHUNATH N (1RR13EC060)**

**RAMARADHYA N (1RR13EC062)**

*Under the guidance of*

**Dr. RANGAIAH L**

**Professor, Dept. of ECE**



**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

**RAJARAJESWARI COLLEGE OF ENGINEERING**

[NBA & NAAC Accredited, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

**#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74**

**2016-2017**



# RAJARAJESWARI COLLEGE OF ENGINEERING

[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU,  
Belagavi, Approved by AICTE, New Delhi]

#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



## CERTIFICATE

This is to certified that the Project work entitled "**SMART SOLAR POWER GENERATION USING MPPT**" is a bonafide work carried out by **JAGADEESHA K** with **USN:1RR13EC028**, **KARAN KUMAR G M** with **USN:1RR13EC032**, **RAGHUNATH N** with **USN:1RR13EC060**, **RAMARADHYA N** with **USN:1RR13EC062** in partial fulfillment for the award of **Bachelor of Engineering in Electronics and Communication Engineering** of the **Visvesvaraya Technological University, Belgavi** 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 departmental library. The Project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said Degree.

for  
Signature of Guide

Dr. Rangaiah L

Signature of HOD

Dr. L. Swarna Jyothi  
PROFESSOR & HEAD  
DEPT. OF ELECTRONICS & COMMUNICATION ENG.  
RAJARAJESWARI COLLEGE OF ENGG.  
BENGALURU - 560 074

Signature of Principal

Dr. R Balakrishna  
Principal

RAJARAJESWARI  
COLLEGE OF ENGINEERING

Name of Examiners

1.

Jee' Prakash Prasad

2.

Dr. L. SWARNA JYOTHI

Signature with Date

28/6/17

28/6/17



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**Jnana Sangama, Belagavi – 590018**



**A PROJECT REPORT**

*ON*

**NEURO-MUSCULAS FATIGUE  
PREDICTION USING sEMG SIGNALS**

*SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE  
AWARD OF*

**BACHELOR OF ENGINEERING**

**IN**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

*Submitted By*

**PAVANSIMHA K**

**USN: 1RR12EC034**

**CHAITRA K N**

**USN: 1RR13EC007**

**KIRAN N B**

**USN: 1RR13EC408**

*Under the guidance of*

**Dr. SWARNA JYOTHI. L**  
**Prof & HOD, Dept. of ECE**



**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING  
RAJARAJESWARI COLLEGE OF ENGINEERING**

[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

**BENGALURU-560074**

**2016-2017**



# RAJARAJESWARI COLLEGE OF ENGINEERING

[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

DEPARTMENT OF ELECTRONICS & COMMUNICATION  
ENGINEERING



## CERTIFICATE

Certified that the project work entitled “NEURO-MUSCULAS FATIGUE PREDICTION USING sEMG SIGNALS” is a bonafide work carried out by PAVANSIMHA K with USN: (RR12EC034), CHAITRA K N with USN: (1RR13EC007), and KIRAN N B with USN: (1RR13EC408), in partial fulfillment for the award of Bachelor of Engineering in Electronics and Communication Engineering of the Viveswaraya Technological University, Belagavi, 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 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. SWARNA JYOTHI. L

Signature of the HOD

Dr. SWARNA JYOTHI. L

Signature of the Principal

Dr. R. BALAKRISHNA

PROFESSOR & HEAD  
DEPT. OF ELECTRONICS & COMMUNICATION ENG.  
RAJARAJESWARI COLLEGE OF ENGG.  
BENGALURU - 560 074

Name of the Examiners:

1. Jai Prakash Prasad
2. Dr. L. SWARNA JYOTHI

Signature with Date:

  
23/6/17  
23/6/17



# **VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**Jnana Sangama, Belgavi – 590018**



## **A PROJECT REPORT**

*On*

## **HEALTH MONITORING AND SECURED DATA MANAGEMENT USING IOT**

*SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE  
AWARD OF DEGREE OF*

## **BACHELOR OF ENGINEERING**

*in*

## **ELECTRONICS AND COMMUNICATION ENGINEERING**

*Submitted by*

**KEERTHI H S**

**1RR13EC034**

**MAITHRI U K SHETTY**

**1RR13EC037**

**KIRAN BAPUGOUD PATIL**

**1RR13EC035**

**MANDHARA G**

**1RR13EC039**

*Under the guidance of*

**Prof. P BHUVANESWARI**

*Associate Professor, Dept of ECE*



**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING  
RAJARAJESWARI COLLEGE OF ENGINEERING**

**(Accredited by NBA & NAAC)**

**(Approved by AICTE, New Delhi and Affiliated to VTU, Belagavi)**

**#14, Ramohalli cross, Kumbalagodu, Mysore Road,**

**Bengaluru-560074**

**2016-17**



# RAJARAJESWARI COLLEGE OF ENGINEERING

(Accredited by NBA & NAAC)

(Approved by AICTE, New Delhi and Affiliated to VTU, Belgavi)

#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

## DEPT. OF ELECTRONICS & COMMUNICATION ENGINEERING



### CERTIFICATE

This is to certified that the project work entitled "**Health Monitoring And Secured Data Management Using IoT**" is a bonafide work carried out by **KEERTHI H S USN:1RR13EC034**, **KIRAN BAPUGOUD PATIL USN:1RR13EC035**, **MAITHRI U K SHETTY USN:1RR13EC037**, **MANDHARA G USN:1RR13EC039** in partial fulfilment for the award of Bachelor of Engineering in **Electronics and Communication** of the **Visvesvaraya Technological University**, Belgavi 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 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

Prof. P Bhuvaneswari

Signature of the HOD

**PROFESSOR & HEAD**  
**DEPT. OF ELECTRONICS & COMMUNICATION ENG,**  
**RAJARAJESWARI COLLEGE OF ENGG,**  
**BENGALURU - 560 074**  
**External Viva - Voce**

Signature of the Principal

Dr. R. Balakrishna

Principal

RAJARAJESWARI

COLLEGE OF ENGINEERING

Ramohalli Cross, Bengaluru-74

Signature with Date:

Name of the Examiners:

1. Jai Prakash Prasad

2. Dr. L. SWARNA HUTHI

Signature with Date: 20/6/17  
Signature with Date: 28/6/17



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**Jnana Sangama, Belagavi – 590018**



**A PROJECT REPORT**

**ON**

**“SAFETY TECHNOLOGIES FOR HIGH RISE  
BUILDINGS WITH INTELLIGENT CRACK  
DETECTION USING IOT”**

*SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE  
AWARD OF DEGREE OF*

**BACHELOR OF ENGINEERING**

**IN**

**ELECTRONICS AND COMMUNICATION**

*Submitted by*

**VINAY KUMAR G [1RR13EC098]**

**DEEPAK [1RR13EC404]**

**BHARATH D R [1RR14EC402]**

**MANASA D [1RR14EC411]**

*Under the guidance of*

**Prof. AJAY M, Assistant Professor**



**DEPARTMENT OF ELECTRONICS & COMMUNICATION  
ENGINEERING**

**RAJARAJESWARI COLLEGE OF ENGINEERING**

*[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]*

**#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74**

**BENGALURU-560074**

**2016-2017**



# RAJARAJESWARI COLLEGE OF ENGINEERING

[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

## DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



### CERTIFICATE

This is to certify that the Project work entitled "**SAFETY TECHNOLOGIES FOR HIGH RISE BUILDINGS WITH INTELLIGENT CRACK DETECTION USING IOT**" is a bonafide work carried out by **VINAY KUMAR G** with **USN:1RR13EC098**, **DEEPAK** with **USN:1RR13EC404**, **BHARATH D R** with **USN:1RR14EC402**, and **MANASA D** with **USN:1RR14EC411**, in partial fulfillment for the award of **Bachelor of Engineering in Electronics and Communication** of the **Visvesvaraya Technological University, Belgaum** 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 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. Ajay M

Signature of the HOD

Dr. L Swarnavathi

Signature of the Principal

Dr. R Balakrishna  
Principal

External Viva

Name of Examiners

1. Jai Prakash Prasad
2. Dr. L. SWARNATHI

RAJARAJESWARI  
COLLEGE OF ENGINEERING  
Ramohalli Cross, Bengaluru-74

Signature with date  
23/6/17



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

**Jnana Sangama, Belagavi – 590018**



**A PROJECT REPORT**

*ON*

**“VOICE CONTROL HOME AUTOMATION SYSTEM  
USING ATMEGA CONTROLLER”**

*SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE  
AWARD OF DEGREE OF*

**BACHELOR OF ENGINEERING  
IN  
ELECTRONICS AND COMMUNICATION**

*Submitted by*

<b>YOGESH C GOWDA</b>	<b>[IRR11EC428]</b>
<b>MANJUNATH K</b>	<b>[IRR10EC018]</b>
<b>BALAJI KV</b>	<b>[IRR13EC005]</b>
<b>KM BALAJI</b>	<b>[IRR13EC031]</b>

*Under the guidance of*

**Prof. ARUNA S, Assistant Professor**



**DEPARTMENT OF ELECTRONICS & COMMUNICATION  
ENGINEERING**

**RAJARAJESWARI COLLEGE OF ENGINEERING**

[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

**#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74**

**BENGALURU-560074**

**2016-2017**



# RAJARAJESWARI COLLEGE OF ENGINEERING

[NBA & NAAC Accredited, ISO Certified 9000:2008, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi]

#14, Ramohalli Cross, Mysore Road, Kumbalagodu, Bengaluru-74

## DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



### CERTIFICATE

This is to certified that the Project work entitled **"VOICE CONTROL HOME AUTOMATION SYSTEM USING ATMEGA CONTROLLER"** is a bonafide work carried out by **YOGESH C GOWDA** with **USN:1RR11EC428**, **MANJUNATH K** with **USN:1RR10EC018**, **BALAJI KV** with **USN:1RR13EC005**, and **KM BALAJI** with **USN:1RR13EC031**, in partial fulfillment for the award of **Bachelor of Engineering in Electronics and Communication** of the **Visvesvaraya Technological University, Belgaum** 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 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. Aruna S**

Signature of the HOD

**PROFESSOR & HEAD**  
**Dr. L. Swarna Nuth**  
DEPT. OF ELECTRONICS & COMMUNICATION ENG.  
RAJARAJESWARI COLLEGE OF ENGG.  
BENGALURU - 560 074

Signature of the Principal

**Dr. R. Balakrishna**  
RAJARAJESWARI  
COLLEGE OF ENGINEERING  
Ramohalli Cross, Bengaluru-74

Name of Examiners

1. **Dr. L. Swarna Nuth**
2. **Dr. R. Balakrishna**

**DR. L. SWARNA NUTH**

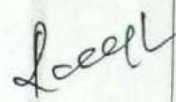



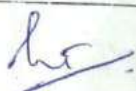
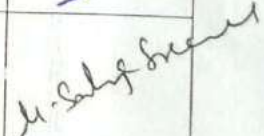



Signature with date

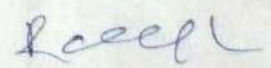
**Dr. R. Balakrishna**  
27/6/17



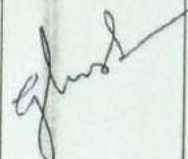


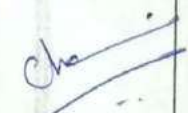
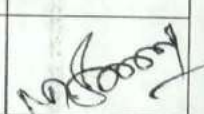


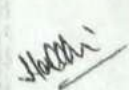
## FINAL YEAR SEMESTER A & B SECTIONS 2017-2018

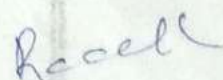
### PROJECT BATCHES AND GUIDES

BATCH NO.	USN	STUDENT NAME	GUIDE NAME	GUIDE SIG.
1	1RR14EC001	A Nikshep Prasad	Dr. L Rangaiah	
	1RR14EC004	Akshay Kumar V M		
	1RR14EC014	Asma Ahmed		
	1RR14EC016	Ayush Yadav		
2	1RR14EC017	B Deekshitha	S.M.Vijaya	
	1RR14EC022	Bindu R		
	1RR14EC024	Chandana G		
	1RR14EC039	Gnanamanjari S		
3	1RR14EC012	Arunkumar S	V.Sreepathi	
	1RR14EC023	C.R.Dileep		
	1RR14EC053	Mallikarjuna C S		
	1RR14EC015	Ayushrathod		
4	1RR14EC028	Dayakar..V	P.Bhuvaneshwari	
	1RR14EC034	Dhanush S		
	1RR14EC040	Harshitha Diwakara		
5	1RR14EC025	Chandana R P	Sunitha.R	
	1RR14EC032	Deepika B		
6	1RR14EC056	Monisha G M	M.Sathya Srinivas	
	1RR14EC057	Nanda A		
	1RR14EC058	Navya T N		
	1RR14EC060	Nisarga S		
7	1RR14EC020	Bharath M	Vani.S.Badiger	
	1RR14EC026	Chandrasagar S		
	1RR14EC050	Madhu. B		
	1RR14EC019	Bhagya C	Lokesha.K	
	1RR14EC021	Bhavana T Petkar		
	1RR14EC037	Gagan T K		
9	1RR14EC006	Anusha R	Sumitha.Manoj	
	1RR14EC029	Deepak Raj K R		
	1RR14EC030	Deepak N V		
	1RR14EC047	Lakshmi E		



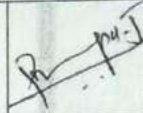

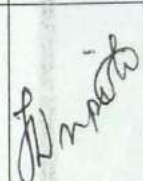


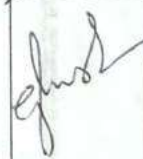
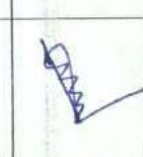
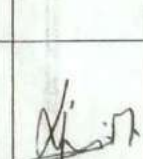
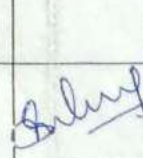


BATCH NO.	USN	STUDENT NAME	GUIDE NAME	GUIDE SIG
10	1RR14EC002	Akshata S	Santhosh.G	
	1RR14EC010	Arpitha E		
	1RR14EC031	Deepashree V A		
	1RR14EC072	Pushpalekha Nag D(B sec)		
11	1RR14EC009	Archana T M	Dr.L.Rangaiah	
	1RR14EC044	Kavya S		
	1RR14EC051	Madhura H N		
	1RR14EC008	Apoorva R		
12	1RR14EC054	Melwyn Joy M	Santhosh chavan	
	1RR14EC059	Nayan V		
	1RR14EC061	Nithya K (B' sec)		
	1RR14EC073	Ranjitha K S (B' sec)		
13	1RR14EC013	Ashwini L	Chaithanya.S	
	1RR14EC042	Harshitha S		
	1RR14EC052	Madhushree B J		
	1RR15EC413	Ranjan D(B' sec)		
14	1RR14EC041	Harshitha T N	Suresh.M	
	1RR14EC045	Kumudha B S		
15	1RR14EC091	Vidya M	Ajay.M	
	1RR14EC080	Shilpa Nanda N		
	1RR14EC082	Shubhaprada S		
16	1RR14EC062	Nyimadakpa	Jyothi A P	
	1RR14EC078	Sathvik S M		
	1RR14EC090	Syed Rumansa		
	1RR13EC018	Goverdhan G		
17	1RR13EC055	Priyanka.C	Haritha.K.S	
	1RR14EC417	Shwetha P		
	1RR14EC422	Vidyashreehiremath		




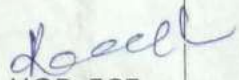
**PROFESSOR & HEAD**  
DEPT. OF ELECTRONICS & COMMUNICATION ENG  
RAJARAJESWARI COLLEGE OF ENGG.  
BENGALURU - 560 074



18	1RR15EC402	Dhanushree V	Pusha.M.J	
	1RR15EC410	Nandini K-T Shilparani		
	1RR15EC415	Sarika S.P		
19	1RR13EC063	Ramya G	Darwin Brötto	
	1RR15EC401	Bhagyashree A N		
	1RR15EC410	Shilpa Rani Nandini K.T		
20	1RR14EC065	Pooja S N	Deepika.J	
	1RR14EC075	Rashmi R Kamadinni		
	1RR14EC076	Samreenunnisa		
	1RR14EC086	Spurthi T M		
21	1RR13EC027	Meghana J	Namitha	
	1RR13EC047	P S SaiSumana		
	1RR13EC092	Triveni M		
✓ 22	1RR14EC408	Jeevan Kumar G	Santhosh Chavan	
	1RR14EC066	Pooja S S		
	1RR14EC071	Preethikumari		
	1RR14EC007	Apporva N Raykar(a sec) <sup>A</sup>		
25	1RR14EC064	Pooja Ganesh Hegde	Santhosh.G	
	1RR14EC077	Sanjana R H		
	1RR15EC403	Divyashree G		
	1RR15EC418	Srinath S		
24	1RR14EC068	Prarthana D Raj	Vani.S.Badiger	
	1RR14EC074	Rashmi N		
	1RR14EC085	Sindhu S		
	1RR14EC087	Sudeepa K R		
25	1RR14EC081	Shilpashree K	Ajay M	
	1RR14EC084	Sindhu R P		
	1RR12EC008	Arshad K P		
	1RR14EC420	Tejas.N.S		
26	1RR14EC089	Surya Kumar M S R	F.Salma Rosline Mary	
	1RR14EC094	Vitthalshivanandjambagi		

PROJECT CO-ORDINATORS

- 1.Sunitha.R   
2.Vani. S Badiger

  
HOD-ECE

PROFESSOR & HEAD  
DEPT. OF ELECTRONICS & COMMUNICATION ENG.  
RAJAJESWARI COLLEGE OF ENGG.  
BENGALURU - 560 074