

## College of Engineering & Technology Approved by AICTE, Affiliated to Anna University, Accredited by NAAC WITH 'A' GRADE Recognized by UGC under 2 (f)



Natham, Dindigul - 624 401. Web: www.nprcet.org

#### **CRITERION 1- CURRICULAR ASPECTS**

#### 1.3 Curriculum Enrichment

1.3.3 Percentage of students undertaking project work/ field work/internship (Data for the latest completed academic year 2021-2022.

Program name	Program Code	List of students undertaking project work/ field work/Internship	Page No
B.E ECE	106	ABILASHA.M	4
B.E ECE	106	AARTHY M	70
B.E ECE	106	ABINAYA .S	16
B.E ECE	106	AFRIN SHIFANA A	85
B.E ECE	106	AJAI GOWTHAM S	96
B.E ECE	106	AJITH KUMAR K	52
B.E ECE	106	AJITHA S	96
B.E ECE	106	AKASH S	73
B.E ECE	106	ARAVINTHAN S	96
B.E ECE	106	ARCHANA P	71
B.E ECE	106	ARIHARAN K	53
B.E ECE	106	ASMA ROSHAN T	52
B.E ECE	106	BALAJI M	86
B.E ECE	106	BALASAKTHI S	54
B.E ECE	106	BLESSING.X	12
B.E ECE	106	CHRISTIYA I	87
B.E ECE	106	DEVI SRI S	88
B.E ECE	106	DHAARINI M J	72
B.E ECE	106	DHARSHINI.V	97
B.E ECE	106	DURGADEVI.B	8
B.E ECE	106	DURGADEVI.S	20
B.E ECE	106	DURGADEVIN.S	97
B.E ECE	106	GAYATHRI M	67
B.E ECE	106	GAYATHRI.M	97
B.E ECE	106	HAREESH V	96
B.E ECE	106	HARINI C	96
B.E ECE	106	HARIPRIYA.M	24
B.E ECE	106	HEMESWAR S	96
B.E ECE	106	ILAKKIYA.B	4
B.E ECE	106	JAWAHAR R	96
B.E ECE	106	JAYA PRATHAP.S	40
B.E ECE	106	JEEVA S	96
B.E ECE	106	JEFFERY ALBERT J	74



## College of Engineering & Technology Approved by AICTE, Affiliated to Anna University, Accredited by NAAC WITH 'A' GRADE Recognized by UGC under 2 (f) Natham, Dindigul - 624 401. Web: www.nprcet.org



B.E ECE	106	JEYARAJ.S	40
B.E ECE	106	ЈУОТНІКА В	52
B.E ECE	106	KAMALESH K	52
B.E ECE	106	KIRUTHIKA.R	28
B.E ECE	106	MAHESWARI R	69
B.E ECE	106	MALAVIKA A	96
B.E ECE	106	MANIYAMMAIYAR N	96
B.E ECE	106	MANOJ PRABHAKAR.V	32
B.E ECE	106	MANOJ S	55
B.E ECE	106	MEERA JAFRIN A	64
B.E ECE	106	MOHAMMED THOUFIQ AGARISH R	96
B.E ECE	106	MOHAN BABU B	84
B.E ECE	106	MUKESH KANNA.G	44
B.E ECE	106	MUTHU MOORTHY M	84
B.E ECE	106	MUTHU VIGNESH.M	32
B.E ECE	106	NANDHA KUMAR G	89
B.E ECE	106	NANDHINI A	65
B.E ECE	106	NISHA.M	16
B.E ECE	106	NIVETHA.K.S	48
B.E ECE	106	NIVETHITHA V	96
B.E ECE	106	PONBHARATHI.V	36
B.E ECE	106	PRASANNA D	75
B.E ECE	106	PRAVEENKUMAR P	96
B.E ECE	106	PUGALARASU.S	36
B.E ECE	106	PUSHPA PRIYADHARSHINI.R	20
B.E ECE	106	RAJKUMAR.K	40
B.E ECE	106	RAMVIGNHESH R P	76
B.E ECE	106	RENUGA DEVI N	81
B.E ECE	106	RISHWANA BURVEEN S	82
B.E ECE	106	SABEER AHAMED T	56
B.E ECE	106	SAI SANKARA NARAYANAN S	96
B.E ECE	106	SANDHIYA D	66
B.E ECE	106	SANJAI KUMAR S	96
B.E ECE	106	SARITHARANI.K	20
B.E ECE	106	SARMATHI.R	48
B.E ECE	106	SASMITHA PARVEEN K	83
B.E ECE	106	SATHISH KUMAR.G	36
B.E ECE	106	SEEMA FATHIMA.S	24
B.E ECE	106	SELVA KUMAR M	96
B.E ECE	106	SHARMILA DEVI G	90

NATHAM



## College of Engineering & Technology Approved by AICTE, Affiliated to Anna University, Accredited by NAAC WITH 'A' GRADE | Recognized by UGC under 2 (f) Natham, Dindigul - 624 401. Web: www.nprcet.org



B.E ECE	106	SHARMILA DEVI G	77
B.E ECE	106	SHINY RESHMA J	78
B.E ECE	106	SINGARABRINDHA N	84
B.E ECE	106	SIVAPRASAD K	97
B.E ECE	106	SIVARANJANI S	97
B.E ECE	106	SNEHA P	91
B.E ECE	106	SOUNDARYA LAKSHMI D	68
B.E ECE	106	SOWMIYA.P	4
B.E ECE	106	SREE RAGA SUDHA.K	12
B.E ECE	106	SUMUGAPRIYA M	79
B.E ECE	106	SUPRAJA SURYAWANSHI	97
B.E ECE	106	SURYA PRAKASH.V.M	44
B.E ECE	106	SWETHA.M	28
B.E ECE	106	THARANI V	97
B.E ECE	106	THARUNKUMAR M	92
B.E ECE	106	UMA NANTHINI N	93
B.E ECE	106	VARSHIINI.B	12
B.E ECE	106	VASANTHAKUMAR M	57
B.E ECE	106	VENNILA.A	8
B.E ECE	106	VIGNESH.R	32
B.E ECE	106	VISHALI K	80



NPR College of Engl and Technology ollege of Engletin and Tech Natham, Dindigui Dt 624 401





### AN DEEP LEARNING MODEL FOR BRAIN TUMOR SEGEMENTATION AND CLASSIFICATION

#### A PROJECT REPORT

#### Submitted by

ABILASHA. M

(920818106001)

ILAKKIYA. B

(920818106010)

**SOWMIYA. P** 

(920818106031)

In partial fulfilment for the award of the degree

of

#### **BACHELOR OF ENGINEERING**

In

#### **ELECTRONICS AND COMMUNICATION ENGINEERING**

NPR COLLEGE OF ENGINEERING AND TECHNOLOGY
NATHAM, DINDIGUL

ANNA UNIVERSITY::CHENNAI 600 025

**JUNE 2022** 

J.SUNDARARAJAN

B.E. M. Tech., Ph.D.,

Principal

N.P.R. College of Engineering & Technology Natham, Dindigul (Dt) - 624 401.

## ANNA UNIVERSITY::CHENNAI 600 025 BONAFIDE CERTIFICATE

Certified that this project report "AN DEEP LEARNING MODEL FOR BRAIN TUMOR SEGMENTATION AND CLASSIFICATION" is the bonafide work of, "ABILASHA.M (920818106001), ILAKKIYA.B (920818106010), SOWMIYA.P (920818106031)" who carried out the project work under my supervision.

SIGNATURE

Dr.S.PONMALAR M.E.,Ph.D.,

HEAD OF THE DEPARTMENT

Professor, Department of

**Electronics and Communication** 

Engineering,

NPR College of Engineering and

Technology, Natham,

Dindigul -624 401.

SIGNATURE

Mr.K.JAYAPRAKASAM M.E.,

**SUPERVISOR** 

Assistant Professor, Department of

**Electronics and Communication** 

Engineering,

NPR College of Engineering and

Technology, Natham,

Dindigul -624 401.

Submitted for the project viva-voice examination held at NPR College of Engineering and Technology in Natham on <u>24-06-2022</u>.

INTERNAL EXAMINER

EXTERNAL EXAMINER

. J.SUNDAR AAJAN, B.E. M.Ted., Ph.D.

N.P.R. College of Engineering & Technology Natham, Dindigel (Dt) - 624 401.

#### **ABSTRACT**

A brain tumor is a portion of uneven cells, need to be detected earlier for treatment. Magnetic Resonance Imaging (MRI) is a routinely utilized procedure to take brain tumor images. Manual segmentation of tumor is a crucial task and laborious. There is a need for an automated system for segmentation and classification for tumor surgery and medical treatments. This work suggests an efficient brain tumor segmentation and classification based on deep learning techniques. Initially, bidirectional ConvLSTM Unet with attention gate proposed for brain tumour segmentation. Then, Deep ResNet and Inception Model used for classification. In addition, bidirectional attention modules of position and channel modules were added in U-Net to extract more characteristic features. Implementation results on BraTS 2018 datasets show that proposed segmentation and classification outperforms in terms of accuracy, dice score, precision rate, recall rate, and Hausdorff Distance.

N.P.R. College of Engineering & Technology Natham, Dindigul (Dt) - 624 401.

#### **CHAPTER 7**

#### CONCLUSION AND FUTURE WORK

This work proposes a segmentation and classification model for brain tumor segmentation and classification. To achieve higher accuracy, a squirrel search optimizer was used to tune the hyperparameters of the U net. We also combine bidirectional and attention modules to the U net model to extract more specific features. The hybridization of ResNet and Inception net was used to classify the tumor type. We implement the proposed models on BraTS 2018 database. Results show that proposed segmentation and classification outperforms in terms of accuracy, dice score, precision rate, recall rate, and Hausdorff Distance.

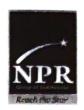
Dr. J.SUNDARAR JAN

B.E., M.Tech., Ph.D.,

Principal

N.P.R. College of Engineering & Technology Mathem, Dindign (Dr.) - 624 401.





# AUTHENTICATION SYSTEM BASED ON VOTING USING EMBEDDED TECHNOLOGY A PROJECT REPORT

Submitted by

**DURGA DEVI B** 

920818106007

**VENNILA A** 

920818106037

In partial fulfilment for the award of the degree

of

**BACHELOR OF ENGINEERING** 

in

ELECTRONIC AND COMMUNICATION ENGINEERING

NPR COLLEGE OF ENGINEERING AND TECHNOLOGY, NATHAM,

**DINDIGUL - 624 401** 

ANNA UNIVERSITY:: CHENNAI 600 025

**JUNE 2022** 

.

Dr. J.SUNDARABAJAN

rincipai

N.P.R. College of Engineerin

Natham, Dindige: (Dr) - U.

#### ANNA UNIVERSITY:: CHENNAI 600 025

#### **BONAFIDE CERTIFICATE**

Certified that this project report "AUTHEHTICATION SYSTEM BASED ON VOTING USING EMBEDDED TECHNOLOGY" is the bonafide work of DURGA DEVI B (920818106007), VENNILA A (920818106037) who carried out the work under my supervision.

**SIGNATURE** 

Dr.S.PONMALAR, M.E., Ph.D.,

HEAD OF THE DEPARTMENT

Professor,

Department of ECE,

NPR College of Engineering

& Technology, Natham,

Dindigul -624 401.

Mr.J.G.SABARISH.M.E.,

**SUPERVISOR** 

Assistant professor,

Department of ECE,

NPR College of Engineering &

Technology, Natham,

Dindigul -624 401.

Submitted for practical examination of EC8811 - Project work held at NPR

College of Engineering and Technology, Natham on Dana 22

Dr. J.SUND

N.P.R. College of Engineerin-Natham, Dindigul (Dr) - 02.5

#### **ABSTRACT**

Finger print based online voting system is an application where the user is recognized by his finger pattern. since the finger pattern of each human being is different, the voter can be easily authenticated. The system allows the voter to vote through his finger print. Finger print is used to uniquely identify the user. The finger print minutiae features are different for each human being. Finger print is used as an authentication of the voters. Voter can vote the candidate only once; the system will allow the candidate to vote for the second time. The system will allow admin to add the candidate's name and candidate photo who are nominated for the election. Admin only has the rights to add candidate name and photo who are nominated. Admin will register the voters name by verifying voter. Admin will authenticate the user by verifying the user's identity proof and then admin will register the voter. The number of candidates added to the system by the admin will be automatically deleted after the completion of the election. Admin has to add the date when the election going to end. The system will allow the user to vote for one time for a particular election. Admin can add any number of candidates when the new election will be announced. Admin can view the election result by using the election id. Even user can view the election result.

ΙV

Dr. J.SUNDARARAJAN,
B.E., M.Tech., Ph.D.,

N.P.R. College of Engineering & Technology Natham, Dindigui (Dt) - 624 401.

#### **CHAPTER 7**

#### **CONCLUSION AND FUTURE WORK**

On this project we concluded that this is the user-friendly approach to the available voting security system. This system achieves high accuracy and reliability by the use of one or more safety and security detection systems. Since it is the cost-effective anti-fraud voting system, it helps to reduce crime rate also. Hence these features make our proposed system more unique. Also, the fingerprint-based voting system provides more secure unlocking over conventional method like lock and key or even password-based system.

Dr. J.





#### **DEEP CONVOLUTION NEURAL NETWORK ON BREAST CANCER DIAGNOSTIC METHODOLODY**

#### A PROJECT REPORT

#### Submitted by

BLESSING.X	(920818106004)
SREE RAGA SUDHA.K	(920818106032)
VARSHIINI.B	(920818106036)

In partial fulfillment for the award of the degree

of

#### **BACHELOR OF ENGINEERING**

in

ELECTRONICS AND COMMUNICATION ENGINEERING

NPR COLLEGE OF ENGINEERING & TECHNOLOGY NATHAM, DINDIGUL

ANNA UNIVERSITY::CHENNAI 600,025

i

**JUNE 2022** 

Dr. J.SUNDARARAJAN,

B.E., M.Tech. Ph.D.,

NAR. College of F Matham, Dinitigo. (21) - 024 404.

## ANNA UNIVERSITY: CHENNAI 600 025 BONAFIDE CERTIFICATE

Certified that this project report "DEEP CONVOLUTION NEURAL NETWORK ON BREAST CANCER DIAGNOSTIC METHODOLOGY" is the bonafide work of "X.BLESSING (920818106004), K.SREERAGASUDHA(920818106032), B.VARSHIINI(920818106036)" who carried out the project work under the supervision.

SIGNATURE

Dr.S.PONMALAR Mrs.C.KANNIKA PARAMESHWARI

**SIGNATURE** 

M.E., Ph.D., M.E.,

HEAD OF THE DEPARTMENT SUPERVISOR

Professor, Associate Professor,

Department of Electronics and Department of Electronics and

Communication Engineering, Communication Engineering,

NPR College of Engineering & NPR College of Engineering &

Technology, Natham, Technology, Natham,

Dindigul-624 401 Dindigul-624 401

Submitted for the project viva-voice examination held at NPR College of

Engineering & Technology in Natham A4.06.2022.

dr. J.Sunidararajan.

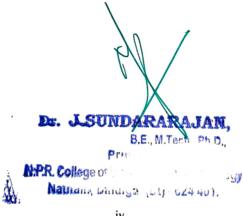
B.E., M.Tech., Ph.D.,

Mrincipa:

Macham, Dindigui (De) - 624 401.

#### **ABSTRACT**

Cancer is the second death-causing disease that affects worldwide women. Breast cancer accounts for 27% of all cancers among females. Current early detection methods are expensive or computationally complex and thus unsuitable for developing countries. For this reason, a real-time fully automated Computer Aided Diagnosis system for Breast Cancer early detection from Ultrasound images is built in this project. The rapid development of Artificial Intelligence with deep learning techniques, has spurred much interest in its application to medical imaging problems. Here, we develop a deep learning algorithm that can accurately detect breast cancer on screening mammograms using an "end-to-end" training approach that efficiently leverages training datasets with either complete clinical annotation or only the cancer status (label) of the whole image. In this approach, lesion annotations are required only in the initial training stage, and subsequent stages require only image-level labels, eliminating the reliance on rarely available lesion annotations. Our all convolutional network method for classifying screening mammograms attained excellent performance in comparison with previous methods. This Project focuses on providing benefits and risks of breast multi-imaging modalities, segmentation schemes, feature extraction, classification of breast abnormalities through stateof-the-art deep learning approaches.



### CHAPTER 7 CONCLUSION & FUTUREWORK

The coverage of this research and the literature reported in this research clearly states that breast cancer is at alarming stage across the globe and in order to prevent it there is a need for some smart systems to handle the complexities associated with this disease. The findings of this study will rebound to the society considering that machine learning plays important role in disease prediction as various techniques of machine learning are helpful in; early detection, avoidance, prediction, reduction in cost, facilitating medical practitioners to make decisions on a real-time basis and diagnose the disease at an early stage. It will be helpful for the patients as well because they may be diagnosed at initial stages of chronic disease. Also, early detection and proper diagnosis can reduce the number of deaths due to chronic disease like breast cancer.







#### LIFI BASED AUTOMATED SMART TROLLEY **USING RFID**

#### A PROJECT REPORT

#### Submitted by

**ABINAYA.S** 

(920818106002)

**NISHA.M** 

(920818106018)

VIVEKA.S

(920818106040)

In partial fulfillment for the award of the degree

of

#### **BACHELOR OF ENGINEERING**

in

ELECTRONICS AND COMMUNICATION ENGINEERING

NPR COLLEGE OF ENGINEERING & TECHNOLOGY

NATHAM, DINDIGUL

ANNA UNIVERSITY::CHENNAI 600 0

**JUNE 2022** 

., M.Tech., Ph.D.,

N.P.R. College of Engineering & Technology Natham, Dindigel (Dt) - 624 401.

#### ANNA UNIVERSITY:: CHENNAI 600 025

#### **BONAFIDE CERTIFICATE**

Certified that this project report "LIFI BASED AUTOMATED SMART TROLLEY USING RFID" is the bonafide work of "ABINAYA.S (920818106002), NISHA.M (920818106018), VIVEKA.S (920818106040)" who carried out the project work under my supervision.

flormede

**SIGNATURE** 

DR.S. PONMALAR, PH.D.,

**HEAD OF THE DEPARTMENT** 

Professor,

Department of Electronics &

Communication Engineering,

NPR College of Engineering & Technology,

Natham,

Dindigul – 624 401.

**SIGNATURE** 

MR.K.JAYAPRAKASAM, M.E.,

**SUPERVISOR** 

Associate Professor,

Department of Electronics &

Communication Engineering,

NPR College of Engineering & Technology,

Natham,

Dindigul – 624 401.

INTERNAL EXAMINER

EXTERNAL EXAMINER

or. J.SUNDARARAJAN,

B.E., N. Tech., Ph.D.,

N.P.R. College of Engineering & Technology Natham, Dindigo (Dt) - 524 401.

#### **ABSTRACT**

A Progressive product is one that lessens manual labor and aids the society with increased comfort and gives a robust performance in everyday life. Such a product is appreciated by the society. Nowadays, buying necessary items at supermarkets and malls has been a daily activity in numerous cities. We observe tremendous rush at shops, especially in the vacation periods and at the weekends. This rush becomes gigantic during the period of various offers and discounts. On such occasions, customers purchase a variety of objects in the supermarkets and put them in a trolley. The very next thing they do is to find the specific product on the list, and a queue to pay at the billing counter. It is a tedious and time-consuming process. To avoid this rigmarole, we are growing a system which we have named as the "LI-FI Based Automated Smart Trolley Using RFID". In this system, we have used the RFID tags in the place of the traditional barcodes. Every product has an RFID tag. Whenever the customer places a particular product inside the trolley, it is scanned through the RFID reader. The weight and cost of the product could be displayed on a private computer. To implement this, we are using Visible Light Communication (VLC) technology to send the corresponding statistics to the central computer. At the billing counter, a Li-Fi receiver is placed, which collects the required information from the Li-Fi transmitter linked to the RF reader. And an LCD display is also placed on the trolley which displays the total amount and number of products, which the customer has purchased.

> Dr. J.SUNDARARAJAN, B.E., M. Tech., Ph.D.,

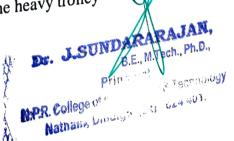
N.P.R. College of Engineering & Technology Natham, Dindigs, (Dt) - 624-901.

### CHAPTER 7 CONCLUSION & FUTURE WORK

A system based on RFID technology that could replace the traditional barcode system was successfully established. The barcode system had various drawbacks including the strict requirements online of sight and its need to be placed in one particular boundary while scanning, not to mention the issues concerning its durability and inability to update information. The only constraint that RFID durability and inability to update and range coverage. RFID tags are durable scanning is known to have is the distance and range coverage. RFID tags are durable and allow constant update of information as well as a rewrite of data to account for changes. They can also operate in extreme temperature conditions and are not susceptible to physical wear and tear or damage under water. This makes the process reliable, flexible and adaptive. The developed product is easy to use and does not require any specific training. It has the effective usage of LI-FI technology, and the smart trolley can minimize the queues in the mall. So that customer's time can be saved. It also uses a LCD display in trolley so that the customer can see the amount for which they have purchased.

In Future, the LCD can be provided with a layout of the shopping market by which the customers can be able to get the exact information about the products present in different aisles. This increase user friendliness.

The smart trolley could interact with customers during a shopping trip. For example, passing on discount vouchers based on where they are in the supermarket. The movement of the trolley can be made automatically with the help of various sensors. In this way, there is no need to pull the heavy trolley







#### SENSORY NERVE CONDUCTION SYSTEM WITH NON INVASIVE GLUCOSE MONITORING USING IOT

#### A PROJECT REPORT

#### Submitted by

 DURGADEVI S
 (920818106008)

 PUSHPA PRIYADHARSHINI R
 (920818106023)

 SARITHARANI K
 (920818106026)

in partial fulfillment for the award of thedegree

of

#### **BACHELOR OF ENGINEERING**

in

#### **ELECTRONICS AND COMMUNICATION ENGINEERING**

NPR COLLEGE OF ENGINEERING & TECHNOLOGY
NATHAM, DINDIGUL

ANNA UNIVERSITY::CHENNAL 600 025

**JUNE 2022** 

Principal

N.P.R. College of Engineering & Technology

Natham, Dindige (Cv) - 624 401.

#### ANNA UNIVERSITY::CHENNAI 600 025

#### **BONAFIDE CERTIFICATE**

**NERVE** SENSORY project report Certified that this NON INVASIVE **GLUCOSE** WITH CONDUCTION SYSTEM MONITORING USING IOT "is the Bonafide work of "DURGADEVI.S PRIYADHARSHINI.R (920818106023), (920818106008), PUSHPA SARITHARANI.K (920818106026)" who carried out the project work under my supervision.

SIGNATURE

Parade

Dr. S.PONMALAR M.E., Ph.D., HEAD OF THE DEPARTMENT

Professor,
Department of Electronics and
Communication Engineering,
NPR College of Engineering and
Technology, Natham,
Dindigul – 624 401.

Mr. S.SUDHAKAR M.E., SUPERVISOR

Assistant Professor,

Department of Electronics and
Communication Engineering,

NPR College of Engineering and
Technology, Natham,

Dindigul – 624 401

Submitted for the project viva-voce examination held at NPR College of Engineering and Technology in Natham on 24.06.22.

INTERNAL EXAMINER

EXTERNAL EXAMINER

D. JSUNDARARAJAN,

N.P.R. College of En. Natham, Ding

#### **ABSTRACT**

Our project is about previous prediction of defecting nerve along with continuous monitoring of glycemic by using noninvasive method. Due to hyper glycaemia which may leads to nerve damage also. It mainly offers online monitoring of patients by doctors for prescribing medications further. It shows the values of glycaemia and variation value in nerve conduction from that we can identify the healthy nerve. In further we implemented our project with embedded technology and IoT (Internet of things) using Arduino controller with sensor nodes that are used for monitoring and data transferring to the cloud. The main objective of our project is non invasive identification of defective nerve and blood glucose monitoring with concurrent nerve study is proposed and concerns for home based health monitoring. Our framework can improve the learning ability and achieve a higher performance

Prince
N.P.R. College of Engine
Natham, Dinorgan

#### CHAPTER-7

#### CONCLUSION AND FUTURE WORK

With the wide use of internet, this work is concentrated to execute the internet technology to establish a system which would communicate through internet for better health. Internet of Things rules the whole world in various fields, mainly in health care sectors. Hence the present work is done to design an Internet of Things based smart patient health tracking system using an Arduino microcontroller. In this, optical sensor is used to detect the glucose level and temperature sensor to read the temperature and sends the data to the cloud using internet. This information is also sent to the LCD display, so patient can easily know their health status. During critical situations to alert the doctor, the warning message is sent to the. The doctor can view the sent data by logging the specific website or IP address. Hence continuous patient monitoring system is designed. In future work we can modify the method of calculating glucose level and Moreover we can identify unusual nerve disorder using this method.

Dr. J.SUNDARARAJAN,

mernet

N.P.R. Coffege of Engineering & Technology Natham, Dindigul (Dt) - 624 401.





## MINE RESCUE ENSEMBLES FOR UNDERGROUND COAL MINING A PROJECT REPORT

Submitted by

HARIPRIYA M

920818106009

SEEMA FATHIMA S

920818106029

In partial fulfilment for the award of the degree

of

#### **BACHELOR OF ENGINEERING**

in

ELECTRONICS AND COMMUNICATION ENGINEERING

NPR COLLEGE OF ENGINEERING AND TECHNOLOGY, NATHAM, DINDUGUL - 624 401

ANNA UNIVERSITY:: CHENNAI 600 025

**JUNE 2022** 



#### ANNA UNIVERSITY:: CHENNAI 600 025

#### **BONAFIDE CERTIFICATE**

Certified that this project report "Mine rescue ensembles for underground coal mining" is the bonafide work of HARIPRIYA M (920818106009), SEEMA FATHIMA S (920818106029) who carried out the work under my supervision.

**SIGNATURE** 

Dr.S.PONMALAR,M.E.,Ph.D., HEAD OF THE DEPARTMENT

Professor,

Department of ECE,

NPR College of Engineering &

Technology, Dindigul -624 401. Natham,

ology, 11 -624 401

SIGNATURE

Mr.J.G.SABARISH,M.E.,

**SUPERVISOR** 

Assistant professor,

Department of ECE,

NPR College of engineering &

Technology, Natham, Dindigul -624 401.

Submitted for practical examination of EC8811 - Project work held at NPR

College of Engineering and Technology, Natham on 24.06.3022

Dr. J.SUNDARARAJAN,

Principal Principal

College of Engineering & Technology

EXTERNAL EXAMINER

INTERNAL EXAMINER

#### **ABSTARCT**

Safety is the most vital part of any type of industry. In the mining industry safety and security is a fundamental aspect of all. To avoid any types of accidents mining industry follows some basic precautions. Still accident takes place in underground mines due to rise in temperature, increased water level, and methane gas leakage. Here we provide safety to workers. When workers in danger, the updated in IoT server. To enhance safety in underground mines, a reliable communication system must be established between workers in the underground mines and fixed ground mine system. The communication network must not be interrupted at any moment and at any condition. A cost-effective supervising system with early warning intelligence is proposed in this project. Worker's status can be monitor over IoT.



#### CHAPTER 6

#### CONCLUSION AND FUTURE WORK

The coal mine safety system is implemented using smoke sensors, respiratory sensors, heartbeat sensors for obtaining and health parameters environmental conditions. A smart alert system is implemented for the safety of mineworkers by alerting them at the right time to escape from the mining environment in case of any accidents. This system constantly observes the coalmine and alerts the worker and the authorized person from the ground station by using IoT technology. The environment and health status of the mineworkers have continuously updated on the IoT web page. The system is cost-effective and efficient with which the medical data of the mine worker is obtained and used for further artificial intelligence-based medical prognosis. Hence the proposed system reduces the death rate and disease alerts for the workers in the mining industry.

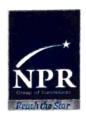
Br. J.SUNDARARAJAN.

B.E., M. Dich., Ph. A.

Pritti Rechnology

Matham, Castle St. 1917.





# SMART PHONE BASED OBJECT RECOGNITION AND GUIDANCE FOR VISUALLY CHALLENGED PEOPLE

#### A PROJECT REPORT

Submitted by

**R.KIRUTHIKA** (920818106013)

M. SWETHA (920818106035)

In partial fulfillment for the award of the degree of

#### **BACHELOR OF ENGINEERING**

In

ELECTRONICS AND COMMUNICATION ENGINEERING

NPR COLLEGE OF ENGINEERING AND TECHNOLOGY

NATHAM, DINDIGUL-624 401

ANNA UNIVERSITY::CHENNAI 600 025

JUNE 2022

M.P.R. College of Engin - - - 2 Technology Natnamy Dingryb. (21) - 024 401.

#### ANNA UNIVERSITY::CHENNAI 600 025 BONAFIDE CERTIFICATE

Certified that this project report "SMART PHONE BASED OBJECT RECOGNITION AND GUIDANCE FOR VISUALLY CHALLENGED PEOPLE" is the bonafide work of R.KIRUTHIKA (920818106013), M.SWETHA (920818106035) who carried out the work under my supervision.

**SIGNATURE** 

Dr.S.PONMALAR M.E.,Ph.D.,

HEAD OF THE DEPARTMENT

Professor, Department of

**Electronics and Communication** 

Engineering,

NPR College of Engineering and

Technology, Natham,

Dindigul-624 401.

SIGNATURE

Dr.S.M.VIJAYARAJAN M.E.,Ph.D

**SUPERVISOR** 

Associate Professor, Department of

**Electronics and Communication** 

Engineering,

NPR College of Engineering and

Technology, Natham,

Dindigul-624 401.

Submitted for the project viva-voce examination held at NPR College of Engineering and Technology in Natham on 24.06.39

INTERNALEXAMINER

EXTERNAL EXAMINER

Dr. J.SUNDARARAJAN,

B.E., M.Tech., Ph.D.,

Principa

N.P.R. College of Engineering & Technology Natham, Dindigs (Dt) - 624 461.

#### **ABSTRACT**

Blindness is a quality of our being. It's as integral to our identities as our nationality, language, and personality. In fact, it's often so fundamental to us that we begin to forget that we're blind. Stick based existing solution only detects obstacles. In this project, propose an artificial intelligence-based stick model for guiding blind people. To assist visually impaired people with obstacle free path-finding. To convert Image into the audio output (Speech) through the use of Artificial intelligence. Detect the image and convert it into audio file. Further, automatic fall on alert is introduced by the use of GSM technology. The proposed model consists of Arduino controller, mp3 player ,GSM, Vibration sensor and voice processor. The scenarios for the usability testing of overall system for blind to evaluate the usability were presented.

Dr. J.SUNDARARAJAN, B.E., M.Tech., Ph.D.,

Principal

N.P.R. College of Engineering & Technology Natham, Dindigul (Dt) - 624 401.

#### **CHAPTER-12**

#### CONCLUSION& FUTURE WORK

In this project, a guidance navigation system for blind people was presented. The approach of the system is based on the idea that a blind pedestrian can be assisted by spoken instructions from a controller by integrating sensors like ultrasonic and AI based object recognition. The scenarios for the usability testing of overall system for blind to evaluate the usability were presented.

#### **FUTURE WORK**

Braille system was developed to eradicate the darkness of visually impaired people and make them gain knowledge for proper interaction with the World. It provides a new opportunity for blind individuals to learn and communicate more effectively with the rest of the World. In Assistive Technology, software-based text-to-Braille translation has proven to be a viable option. Future work presents a communicator, a hardware setup that helps visually challenged people to communicate, among others. The work aims to eliminate the divide between blind users and end-users in telecommunications and make them more robust by providing them with the total enhancements for interaction with others and servicing their necessities. A methodology is designed to create a Braille system that will enable vision-impaired people to communicate and engage.

Dr. J.SUNDARARAJAN

B.E., M. ech., Ph.O.,

N.P.R. College of Engineering & Technology Natham, Dindign (Dt) - 624 -631.





#### DESIGN OF TIRE PRESSURE MONITORING SYSTEM WITH VEHICLE TO VEHICLE COMMUNICATION

#### A PROJECT REPORT

#### Submitted by

MANOJ PRABHAKAR.V (920818106014)

MUTHU VIGNESH.M (920818106017)

VIGNESH.R (920818106036)

in partial fulfillment for the award of the

degree of

#### **BACHELOR OF ENGINEERING**

in

### ELECTRONICS AND COMMUNICATION ENGINEERING

NPR COLLEGE OF ENGINEERING AND TECHNOLOGY

NATHAM, DINDIGUL

i

di. J.SUNDAKARAJAN,

B.E., M. Jech., Ph.D.

N.P.R. College of Engineering & Technology

Matham, Dindiger (Dr.) - 624 461.

## ANNA UNIVERSITY:: CHENNAI 600 025 BONAFIDE CERTIFICATE

Certified that this project report "Design of tire pressure monitoring system with vehicle to vehicle communication" is the Bonafide work of "MANOJ PRABHAKAR.V (920818106014), MUTHU VIGNESH.M (920818106017), VIGNESH.R (920818106036)" who carried out the project work under my supervision.

& Ponde

**SIGNATURE** 

Dr. S. PONMALARM.E., Ph.D.,

HEAD OF THE DEPARTMENT,

Department of Electronics and Communication Engineering,

NPR College of Engineering and Technology,

Natham,

Dindigul-624 401.

J. Ponnole

SIGNATURE

Dr. S. PONMALAR M.E., Ph.D.,

HEAD OF THE DEPARTMENT,

Department of Electronics and Communication Engineering

NPR College of Engineering and and Technology,

Natham,

Dindigul-624 401.

Submitted for the project viva-voce examination held at NPR College of

Engineering and Technology in Natham on\_

INTERNAL EXAMINER

EXTERNAL EXAMINER

dr. J.SUNDARARAJAN,

B.E., W. Tech., Ph.D.,

Principal

N.P.R. College of Engineerin & Technology Notham, Dindigm (Dt) - 624 401.

#### **ABSTRACT**

A V2V communication technology can increase the performance of vehicle safety systems and help save lives. There were 5.6 million police-reported motor vehicle crashes in 2015, and the number of fatalities from police-reported motor vehicle crashes continues to rise. Legal regulations of road safety require that each vehicle is equipped with active and passive safety systems such as ABS, ESP, AB, etc. Requirements for brake systems of cars were formulated in Regulations of 13 UN Economic Commission for Europe (ECE). Tires provide the only contact of the vehicle with the substrate; whether a vehicle can maintain direction of motion, or whether it can stop before the barrier This project proposes them. vehicle to depends communication with the alert of tire pressure level and accident indication .The proposed system includes arduino controller ,tire pressure sensor, blue tooth communication with GSM and GPS modules. Experimental results verify the efficient of proposed system.

Dr. J.SUNDARARAJAN,

B.E., M.Tech., Ph.D.,

N:PR. College of Engineering & Technology Natham, Dindigs (Ot) - 624 401.

#### Chapter 7

#### 7. CONCLUSION

Vehicle communication system makes better fleet management and which in turn brings large profits. Better scheduling or route planning can enable you handle larger jobs loads within a particular time. Vehicle tracking both in case of personal as well as business purpose improves safety and security, communication medium, performance monitoring and increases productivity. So in the coming year, it is going to play a major role in our day-to-day living. Main motto of the accident alert system project is to decrease the chances of losing life in such accident which we can't stop from occurring. Whenever accident is alerted the paramedics are reached to the particular location to increase the chances of life. This device invention is much more useful for the accidents occurred in deserted places and midnights. This vehicle tracking and accident alert feature plays much more important role in day to day life in future.

Dr. J.SUNDARARAJAN,
B.E., M. Tech., Ph.D.,
Principal
N:P.R. College of Engineering & Technology
Natham, Dindiga. (Dt) - 624 401.





## MACHINE TO MACHINE MESSAGING MECHANISM USING WSN FOR FAULT TOLERANT OPERATIONS

#### A PROJECT REPORT

#### Submitted by

**PONBHARATHI.V** 

(920818106020)

**PUGALARASU.S** 

(920818106022)

SATHISH KUMAR.G

(920818106028)

in partial fulfillment for the award of thedegree

of

BACHELOR OF ENGINEERING in

**ELECTRONICS AND COMMUNICATION ENGINEERING** 

NPR COLLEGE OF ENGINEERING AND TECHNOLOGY

NATHAM, DINDIGUL.

ANNA UNIVERSITY :: CHENNAI 600 025

**JUNE 2022** 

Dr. J.SUNDARARAJAN,

Principal

N.P.R. College of Engineering & Technology

Natham, Dindigue (ER) - 624, 401.

# ANNA UNIVERSITY:: CHENNAI 600 025 BONAFIDE CERTIFICATE

Certified that this project report "MACHINE TO MACHINE MESSAGING MECHANISM USING WSN FOR FAULT TOLERANT OPERATIONS" is the Bonafide work "PONBHARATHI.V (920818106020), PUGALARASU.S (920818106022), SATHISHKUMAR.G (920818106028)" who carried out the project work under my supervision.

SIGNATURE

Dr. S. PONMALAR M.E., Ph.D.,

HEAD OF THE DEPARTMENT

Professor,

Department of Electronics and

Communication Engineering,

NPR College of Engineering

and Technology, Natham,

Dindigul-624 401.

SIGNATURE

Ms. S. PRIYADHARSINI M.E.,

**SUPERVISOR** 

Assistant professor,

Department of Electronics and

Communication Engineering,

NPR College of Engineering

and Technology, Natham,

Dindigul-624 401.

Submitted for the project viva-voce examination held at NPR College of

Engineering and Technology in Natham on

INTERNALEXAMNER

EXTERNAL EXAMINER

Dr. J.SUNDARARAJAN,

B.E., M.Tech., Ph.D.,

N.P.R. College of Engineering & Technology Natham, Dindigs: (Dt) - 624 401.

#### **ABSTRACT**

Machine-to-machine (M2M) communication is a key enabling technology for the future industrial Internet of Things applications. It plays an important role in the connectivity and integration of computerized machines, such as sensors, actuators, controllers, and robots. The requirements in flexibility, efficiency, and crossplatform compatibility of the intermodule communication between the connected machines raise challenges for the M2M messaging mechanism toward ubiquitous data access and events notification. This investigation determines the challenges facing the M2M communication of industrial systems and presents a data-oriented M2M messaging mechanism based on zigbee communication. In this project, M2M communication based fault tolerant working of machines are proposed . The proposed system includes temperature and vibration sensors with overload indicator for fault tolerant operations. The evaluation is carried out through qualitative analysis and experimental studies, and the results demonstrate the feasibility of the proposed messaging mechanism. Due to the flexibility in dealing with hierarchical system architecture and cross-platform heterogeneity of industrial applications, this messaging mechanism deserves extensive investigations and further evaluations.

> Dr. J.SUNDARARAJAN, B.E.M.Tech., Ph.D.,

Principal

N.P.R. College of Engineering & Technology Natham, Dindigs (Dt) - 624 401.

#### CHAPTER 6

### CONCLUSION AND FUTURE WORK

The number of interconnected machines will very soon exceed the overall population count. Therefore, it is of vital importance to be able to understand Machine-to-Machine (M2M) interactions. In this project we focus on giving a short overview of M2M communication principles and basic architecture. Furthermore, we present efforts of different standardisation bodies and their recommendations concerning open issues in the M2M field. Additionally, we bring forward an introduction to Ericsson's 50 Billion Connected Devices strategy, as well as provide a brief description of M2M based solutions from various leading telecommunications industry participants such as Ericsson, Nokia, Siemens and Motorola.

Dr. J.SUNDARARAJAN,
B.E., M.Tech., Ph.D.,
Principal
N.P.R. College of Engineering & TechnoNatham, Dindigni (Da) - 924 A9 1





# MACHINE LEARNING MODEL FOR FATIGUE LEVEL DETECTION

#### A PROJECT REPORT

#### Submitted by

JAYA PRATHAP.S

(920818106011)

**JEYARAJ.S** 

(920818106012)

RAJKUMAR.K

(920818106024)

in partial fulfillment for the award of the

degree of

#### **BACHELOR OF ENGINEERING**

in

# ELECTRONICS AND COMMUNICATION ENGINEERING

NPR COLLEGE OF ENGINEERING AND TECHNOLOGY

NATHAM, DINDIGUL.

Dr. J.SUNDARARAJAN,

B.E. M. Tech., Ph.D.,

N.P.R. College of Engineering & Technology Natham, Dindiga: (Ex) - 624 401.

# ANNA UNIVERSITY:: CHENNAI 600 025 BONAFIDE CERTIFICATE

Certified that this project report "Machine learning model for Fatigue

Level Detection" is the Bonafide work of "JAYA PRATHAP.S

(920818106011),

JEYARAJ.S(920818106012),

RAJKUMAR.K

(920818106024)" who carried out the project work under my supervision.

R. Panale\_ SIGNATURE

Dr. S. PONMALAR, M.E., Ph.D.,

Professor,

HEAD OF THE DEPARTMENT

Department of Electronics and Communication Engineering,

NPR College of Engineering

and Technology,

Natham.

Dindigul-624 401.

**SIGNATURE** 

Dr. M. AMEENA BANU

M.E., Ph.D.,

Associate Professor,

Department of Electronics and Communication Engineering,

NPR College of Engineering

and Technology,

Natham,

Dindigul-624 401.

Submitted for the project viva-voce examination held at NPR College of

Engineering and Technology in Natham on

INTERNAL EXAMINER

EXTERNAL EXAMINER

D. J.SIINDARARAJAN.

B.E. M.Tech., Ph.D.,

Princina

N.P.R. College of Engineering & Technology Natham, Dindlors (Dt) - 624 401.

#### ABSTRACT

Vehicle accidents are most common if the driving is inadequate. It happens on most factors if the driver is drowsy or if he is alcoholic. Driver drowsiness is recognized as an important factor in the vehicle accidents. It was demonstrated that driving performance deteriorates with increased drowsiness with resulting crashes constituting more than 30% of all vehicle accidents. But the life lost once cannot be re-winded. Advanced technology offers some hope to avoid these up to some extent. This project involves measure and control of the eye blink using IR sensor. The IR transmitter is used to transmit the infrared rays in our eye. The IR receiver is used to receive the reflected infrared rays from the eye. If the eye is closed means the output of IR receiver is high otherwise the IR receiver output is low. This will help to know whether the eye is in closing or opening position. The output is given to logic circuit to indicate the alarm. This project involves controlling accident due to unconscious through eye blink. Here one eye blink sensor is fixed in vehicle where if anybody looses conscious and indicate through alarm. Further, pulse rate sensor is included with GSM for monitoring the health status of the drivers.

> Dr. J.SUNDA B.E., M.Tech., Ph.D.,

Principal

N.P.R. College of Engineering & Technology Natham, Dindigul (De) - 624 401.

#### Chapter 6

#### **CONCLUSION**

Our project Accident Prevention by Eye Blinking Sensor was implemented successfully. The sensor values are processed using ANN. This device provides much advanced facilities in now a days life as it can be easily implemented in vehicles. Thus we can reduce a drowsy related road accidents and hence these kinds of detectors have a great relevance. It can also be used in schools, colleges, offices and some public places such as hospitals, libraries etc. Through this project we present hardware programming of microcontroller to facilitate as eye blinking sensor.

B.E., V. Tech., Ph.D.,
Principal
R.PR. College of Engineering & Technology
Natham, Dindigm (Dt) - 624 401





# WATER QUALITY MONITORING AND WASTE MANAGEMENT USING IOT FOR SMART CITY

A PROJECT REPORT

Submitted by

**MUKESH KANNA.G** 

(920818106016)

SURYA PRAKASH.V.M

(920818106033)

**VIGNESH.S** 

(920818106302)

Impartial fulfillment for the award of the degree

OJ BACHELOR OF ENGINEERING

in

ELECTRONICS AND COMMUNICATION ENGINEERING

NPR COLLEGE OF ENGINEERING AND TECHNOLOGY,

NATHAM, DINDIGUL – 624401.

ANNAUNIVERSITY: CHENNAI600025

**JUNE2022** 

i

Dr. J.SUNDARARAJAN,

B.E., MTech., Ph.D., Principal

N.P.R. Cotlege of Engineering & Technology Natham, Dindigm (Dt) - 624 401.

#### ANNA UNIVERSITY: CHENNAI 600 025

#### **BONAFIDE CERTIFICATE**

Certified that this project report "WATER QUALITY MONITORING AND WASTE MANAGEMENT USING IOT FOR SMART CITY" in the Bonafide work of MUKESH KANNA.G (920818106016), SURYA PRAKASH.V.M (920818106033), VIGNESH.G (920818106302) who carried out the project under my supervision, during the academic year 2021-2022.

SIGNATURE

Dr. S.PONMALAR,

M.E., Ph. D.,

**HEAD OF THE DEPARTMENT** 

Professor,

Department of ECE,

NPR College of Engineering & Technology,

Natham,

Dindigul - 624 401.

SIGNATURE 6

Dr. A.GOPISAMINATHAN,

M.E., Ph. D.,

**SUPERVISOR** 

Professor,

Department of ECE,

NPR College of Engineering & Technology,

Natham,

Dindigul - 624 401.

Submitted for the project viva-voce examination held at NPR College of

Engineering & Technology in Natham on\_

INTERNAL EXAMINAR

EXTERNAL EXAMINAR

Dr. J.SUNDARARAJAN

B.E., W. Tech., Ph.D.

N.P.R. Coffege of Engineering & Technology Natham, Dindigul (Dt) - 624 401.

i

#### **ABSTRACT**

The Large deployment of Internet of Things is permitting Smart City projects all over the world. The massive organization of Internet of Things is allowing Smart City activities and everywhere throughout the world. The services are transforming cities by improving waste management, saving water and improving the quality of human life. In this proposed system, using IOT with Extended Ports integrating the smart city prototype. As we are developing the Smart water Tank and Smart Garbage System. The main advantages of the proposed architecture and how it is benefits in the city. The goal is to improve the water utilization to high with minimal water waste and to keep clean and hygiene city with smart waste box management system. This proposed system is develops with automated system with location tracker, transmitting alert, and monitoring through IOT system

Dr. J.SUNDAHARAJAN B.E., M.Tech., Ph.D.

N.P.R. College of Engineering & Technology Natham, Dindigal (Dt) - 624 401.

# CHAPTER-8 CONCLUSIONS

In our proposed system, water quality monitoring and water level in tank as well as it also include to monitoring the smart waste box management. The proposed system is created with the use of different sensors, microcontroller ATMEGA 328p as controller and Cloud for storing the data from microcontroller and sending the command to controller for measuring water quality, water level and waste box management. The generated data can be viewed using web interface all over the city. The advantage of the system is to provide the adequate water supply with good quality water to each house, industry, and keep city clean with smart box management.







# **BLOCKCHAIN BASED SECURE AND ENERGY** EFFICIENT ROUTING PROTOCOL FOR WSN

#### A PROJECT REPORT

#### Submitted by

**NIVETHA.KS** 

(920818106019)

SARMATHI. R

(920818106027)

VISHALINI.B

(920818106039)

In partial fulfillment for the award of the degree

of

#### **BACHELOR OF ENGINEERING**

In

**ELECTRONICS AND COMMUNICATION ENGINEERING** 

NPR COLLEGE OF ENGINEERING AND TECHNOLOGY NATHAM, DINDIGUL

ANNA UNIVERSITY:: CHENNAI 600 025

**JUNE 2022** 

Dr. J.SUNDARAR

B.E., M. Tech., Ph.C. Principal

N.P.R. College of Engineering & Technology Natham, Dindigui (Dt) - 624 401.

## ANNA UNIVERSITY: CHENNAI 600 025 **BONAFIDE CERTIFICATE**

Certified that this project report "BLOCKCHAIN BASED SECURE AND ENERGY EFFICIENT ROUTING PROTOCOL FOR WSN" in the Bonafide work of NIVETHA. K.S(920818106019), SARMATHI. R (920818106027), VISHALINI.B (920818106039) who carried out the projectunder my supervision, during the academic year 2021-2022.

Dr.S.PONMALAR, M.E., Ph.D., HEAD OF THE DEPARTMENT

Professor,

Department of ECE,

NPR college of Engineering &

Technology, Natham,

Dindigul - 624 401

Dr.S.M.VIJAYARAJAN, M.E., Ph.D.,

**SUPERVISOR** 

Associate professor,

Department of ECE,

NPR college of Engineering &

Technology, Natham,

Dindigul - 624 401

Submitted for the project viva-voce examination held at NPR College of Engineering & Technology in Natham on <u>24-06-2022</u>.

Dr. JSUNDA

N.P.R. College of E'II

Natham, D. Janger 1997 024 401.

#### **ABSTRACT**

In this paper, an encryption and trust evaluation model is proposed on the basis of block chain in which the identities of Aggregator Nodes (ANs) and SensorNodes (SNs) are stored. The authentication of ANs and SNs are performed in public and private block chains, respectively. However, inauthentic nodes utilize the network's resources and perform malicious activities. Moreover, the SNs have limited energy, transmission range and computational capabilities, and are attacked by malicious nodes. Afterwards, the malicious nodes transmit wrong information of the route and increase the number of retransmissions due to which SNs energy is rapidly consumed. The lifespan of the wireless sensor network is reduced due to the rapid energy dissipation of SNs. Furthermore, the throughput increases and packet loss increase with presence of malicious nodes in the network. The trust values of SNs are computes to eradicate the malicious nodes from the network. Secure routing in the network is performed considering residual energy and trust values of SNs. Moreover, the Rivest-Shamir-Adlemen (RSA), a cryptosystem that provides a asymmetric key, is used for securing data transmission. The simulation results show the effectiveness of the proposed model in terms of high packet delivery ratio.

Dr. J.SUNDARARAJAI

B.E., M.Tech., Ph.D.,

N.P.R. College of Engineering & Technology Natham, Dindigui (Dt) - 624 401.

#### **CHAPTER-7**

#### **CONCLUSION AND FUTURE WORK**

In this project, we present a secure authentication and routing mechanism for WSNs. The aim of our proposed mechanism is to carry out authentication of the sensor nodes and ensure the secure communication between the nodes and BS. The proposed routing protocol selects the nodes on the basis of shortest distance from the BS. Whereas, a secure authentication mechanism of nodes is performed using the Bidirectional-blockchain .Results show that our proposed model improves the packet delivery ratio and the network lifetime. In future work, the proposed idea will be tested on larger networks and a realistic routing environment.

Dr. J.SUNDARAHAJAN

B.E., M.Tern., Ph.D.,

Principal

N.P.R. College of Engineering & Technology Natham, Dindigul (Dt) - 624 401.



**GST No: 33AACCE2334EIZA** CIN No: U72200TN2006PTC060465







Date: 15.03.2022

## TO WHOMSOEVER IT MAY CONCERN

This is to certify that the students of third year ECE of NPR College of Engineering & Technology, Natham have successfully done the Internship training in our concern from 21.02.22 to 07.03.2022

During this period they were sincere and hardworking.

Name of the student	Register Number	Year& Branch
Ajith Kumar .K	920819106008	III ECE
Asma Roshan. T	920819106007	III ECE
Jyothika .B	920819106021	III ECE
Kamalesh.K	920819106022	III ECE
Keerthi.M	920819106024	III ECE
	Ajith Kumar .K  Asma Roshan. T  Jyothika .B  Kamalesh.K	Ajith Kumar .K 920819106008  Asma Roshan. T 920819106007  Jyothika .B 920819106021  Kamalesh.K 920819106022

N.P.R. College of Engineering & Technology Natham, Dindigul (Dt) - 624 401.

With Regards

echnologies)

BRIGHT

TECHNOLOGY

(Institute for technical traning)

Cell: 9655913231, 9566913231 Mail: thebrighttechnology@gmail.com

Date: 10.03.2022

#### To whomsoever it may concern

This is to certify that Mr. K.Ariharan (920820106007), Second year ECE of NPR College of Engineering and Technology, Natham has undergone In-Plant training in our organization from 03.03.2022 – 10.03.2022

We Appreciate his participation with interest towards the training program

HATHAM MAHAM

Principal

N.P.R. Bollege of Engineering & Technology

Natham, Dindigul (Dt) - 624 401.

A ONO PHONE IN

3 Juny

# BRIGHT

(Institute for technical traning)

Cell: 9655913231, 9566913231 Mail: thebrighttechnology@gmail.com

Date: 10.03.2022

### To whomsoever it may concern

This is to certify that Mr. S.Balasakthi (920820106008), Second year ECE of NPR College of Engineering and Technology, Natham has undergone In-Plant training in our organization from 03.03.2022 – 10.03.2022

We Appreciate his participation with interest towards the training program

HATHAM HOO

N.P.R. College of Engineering & Technology Natham, Dindigul (Dt) - 624 401

3 Finns

# BRIGHT TECHNOLOGY (Institute for technical traning)

Cell: 9655913231, 9566913231
Mail: thebrighttechnology@gmail.com

Date: 10.03.2022

#### To whomsoever it may concern

This is to certify that Mr. S.Manoj (920820106023), Second year ECE of NPR College of Engineering and Technology, Natham has undergone In-Plant training in our organization from 03.03.2022 - 10.03.2022

We Appreciate his participation with interest towards the training program

NATHAM TO HO

N.P.R. College of Engineering & Technology Natham, Dindigul (Dt) - 624 401 A A S C LE VI

3 Juny

# BRIGHT TECHNOLOGY (Institute for technical traning)

Cell: 9655913231, 9566913231 Mail: thebrighttechnology@gmail.com

Date: 10.03.2022

# To whomsoever it may concern

This is to certify that Mr. T.Sabeer Ahamed (920820106032), Second year ECE of NPR College of Engineering and Technology, Natham has undergone In-Plant training in our organization from 03.03.2022 – 10.03.2022

We Appreciate his participation with interest towards the training program

NATHAM OF

N.P.R. College of Engineering & Technology Natham, Dindigul (Dt) - 624 401.

3 Finn



Cell: 9655913231, 9566913231 Mail: thebrighttechnology@gmail.com

Date: 10.03.2022

#### To whomsoever it may concern

This is to certify that Mr. M.Vasanthakumar (920820106046), Second year ECE of NPR College of Engineering and Technology, Natham has undergone In-Plant training in our organization from 03.03.2022 – 10.03.2022

We Appreciate his participation with interest towards the training program

N.P.R. College of Engineering & Technology Natham, Dindigul (Dt) - 624 491. O, ve see ...

S Finns



Ref No: SUP/INT/21128

#### INTERNSHIP TRAINING CERTIFICATE

#### **TO WHOM IT MAY CONCERN**

This is to certify that Ms. Durgadevi.S pursuing her Final year ECE at NPR College of Engineering & Technology, Natham, has undergone her Internship Training in our concern from 24.02.2022 to 07.03.2022.

We appreciate her participation with interest towards the training program.

With Regards,

For SUPERFECT SOLUTIONS,

**AUTHORIZED SIGNATORY** 

Pfincipal

N.P.R. College of Engineering & Technology

Natham, Dindigul (Dt) - 624 401

#### SUPERFECT SOLUTIONS



Ref No: SUP/INT/21128

# **INTERNSHIP TRAINING CERTIFICATE**

## TO WHOM IT MAY CONCERN

This is to certify that Ms. Ilakkiya B pursuing her Final year ECE at NPR College of Engineering & Technology, Natham, has undergone her Internship Training in our concern from 24.02.2022 to 07.03.2022.

We appreciate her participation with interest towards the training program.

With Regards,

For SUPERFECT SOLUTIONS,

AUTHORIZED SIGNATORY

NATHAM NATHAM

Principal

N.P.R. College of Engineering & Technolo Natham, Dindigul (Dt) - 624 401

## SUPERFECT SOLUTIONS



Ref No: SUP/INT/21128

# INTERNSHIP TRAINING CERTIFICATE

## TO WHOM IT MAY CONCERN

This is to certify that Ms. Sowmiya P pursuing her Final year ECE at NPR College of Engineering & Technology, Natham, has undergone her Internship Training in our concern from 24.02.2022 to 07.03.2022.

We appreciate her participation with interest towards the training program.

With Regards,

For SUPERFECT SOLUTIONS,

AUTHORIZED SIGNATORY

HAM HAD

N.P.R. College of Engineering & Technology Natham, Dindigul (Dt) - 624 404

## SUPERFECT SOLUTIONS



Ref No: SUP/INT/21128

# INTERNSHIP TRAINING CERTIFICATE

# **TO WHOM IT MAY CONCERN**

This is to certify that Mr. Mukesh kanna G pursuing his second year ECE at NPR College of Engineering & Technology, Natham, has undergone his Internship Training in our concern from 24.02.2022 to 07.03.2022.

We appreciate his participation with interest towards the training program.

With Regards,

For SUPERFECT SOLUTIONS,

AUTHORIZED SIGNATORY

HATHAM O

N.P.R. College of Engineering & Technolog Natham, Dindigul (Dt) - 624 40

## SUPERFECT SOLUTIONS



Ref No: SUP/INT/21128

#### INTERNSHIP TRAINING CERTIFICATE

#### **TO WHOM IT MAY CONCERN**

This is to certify that Mr. Pugalarasu S pursuing his second year ECE at NPR College of Engineering & Technology, Natham, has undergone his Internship Training in our concern from 24.02.2022 to 07.03.2022.

We appreciate his participation with interest towards the training program.

With Regards,

For SUPERFECT SOLUTIONS,

**AUTHORIZED SIGNATORY** 

HATHAM HOO

Principal

N.P.R. College of Engineering & Technology

Natham, Dindigul (Dt) - 624 404

#### SUPERFECT SOLUTIONS



Ref No: SUP/INT/21128

# INTERNSHIP TRAINING CERTIFICATE

# TO WHOM IT MAY CONCERN

This is to certify that Mr. Ponbharathi V pursuing his second year ECE at NPR College of Engineering & Technology, Natham, has undergone his Internship Training in our concern from 24.02.2022 to 07.03.2022.

We appreciate his participation with interest towards the training program.

With Regards,

For SUPERFECT SOLUTIONS,

AUTHORIZED SIGNATORY

N.P.R. College of Engineering & Technology Natham, Dindigul (Dt) - 624 404

#### SUPERFECT SOLUTIONS



#### TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. MEERA JAFRIN.A (920820106024) doing Second year B.E, Electronics and Communication Engineering in NPR College of Engineering & Technology, Natham has undergone the In-plant training program offered by our organization during the period of 03.03.22 – 10.03.22

We wish her every success in life.

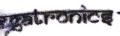
For Megatronics

NATHAN SO

Principal

N.P.R. College of Engineering & Technology

Natham, Dindigul (Dt) - 624 401



#### TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. NANDHINI.A (920820106020) doing Second year B.E, Electronics and Communication Engineering in NPR College of Engineering & Technology, Natham has undergone the In-plant training program offered by our organization during the period of 03.03.22 – 10.03.22

We wish her every success in life.

For Megatron (C.Kabhan)

HATHAM NO TO SHOW THE SHOW THE

N.P.R. College of Engineering & Technologiathum, Dindigul (Dt) - 624 401

egatronics

Date: 10.03.2022

# TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. SANDHIYA.D (920820106034) doing Second year B.E, Electronics and Communication Engineering in NPR College of Engineering & Technology, Natham has undergone the In-plant training program offered by our organization during the period of 03.03.22 - 10.03.22

We wish her every success in life.

For Megatronia



N.P.R. College of Engineering & Techno Natham, Dindigul (Dt) - 624 401

gatronics

Date: 10.03.2022

### TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. GAYATHRI.M (920820106303) doing Second year B.E, Electronics and Communication Engineering in NPR College of Engineering & Technology, Natham has undergone the In-plant training program offered by our organization during the period of 03.03.22 – 10.03.22

We wish her every success in life.

(C.Kubhan)

NATHAM ON THE PARTY OF THE PART

P.R. College of Engineering & Technology Natham, Dindigul (Dt) - 624 401 gatronica

Date: 10.03.2022

# TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. SOUNDARYA LAKSHMI.D (920820106041) doing Second year B.E, Electronics and Communication Engineering in NPR College of Engineering & Technology, Natham has undergone the In-plant training program offered by our organization during the period of 03.03.22 – 10.03.22

We wish her every success in life.

(C.Kabhan)

NATHAN E

N.P.R. College of Engineering & Technol Natham, Dindigul (Dt) - 624 401



## TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. MAHESHWARI.R (920820106020) doing Second year B.E, Electronics and Communication Engineering in NPR College of Engineering & Technology, Natham has undergone the In-plant training program offered by our organization during the period of 03.03.22 – 10.03.22

We wish her every success in life.





N.R.R. College of Engineering & Technolog Natham, Dindigul (Dt) - 624 401

# Vi Microsystems Pvt. Ltd.,

Plot No.75, Electronics Estate, Perungudi, Chennai - 600096.
Tel: 044-2496 1842, 2496 1852

E-mail: sales@vimicrosystems.com Website: www.vimicrosystems.com

GSTIN: 33AAACV0909J1ZJ PAN No.: AAACV0909J

Date: 15.03.2022

## **TO WHOM IT MAY CONCERN**

This is to certify that **Ms.Aarthy M** (920820106001) studying in Second year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone In-Plant training in our organization for 8 days from 08.03.2022 to 15.03.2022.

During the period, her conduct was found to be good.



Principal

J.P.R. College of Engineering & Technolog

Natham, Dindigul (Dt) - 624 401

For VI Nicrosystems

# Vi Microsystems Pvt. Ltd.,

Plot No.75, Electronics Estate, Perungudi, Chennai - 600096. Tel: 044-2496 1842, 2496 1852

E-mail: sales@vimicrosystems.com Website: www.vimicrosystems.com GSTIN: 33AAACV0909J1ZJ PAN No.: AAACV0909J

Date: 15.03.2022

#### TO WHOM IT MAY CONCERN

This is to certify that **Ms.Archana P** (920820106006) studying in Second year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone In-Plant training in our organization for 8 days from 08.03.2022 to 15.03.2022.

During the period, her conduct was found to be good.



N.P.R. College of Engineering & Technology

For VI Microsystem

Natham, Dindigul (Dr) . 434 (6)

# Vi Microsystems Dvt. Ltd.,

Plot No.75, Electronics Estate, Perungudi, Chennai - 600096. Tel: 044-2496 1842, 2496 1852

E-mail: sales@vimicrosystems.com Website: www.vimicrosystems.com

GSTIN: 33AAACV0909J1ZJ PAN No.: AAACV0909J

Date: 15.03.2022

#### TO WHOM IT MAY CONCERN

This is to certify that Ms.Dharani M J (920820106010) studying in Second year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone In-Plant training in our organization for 8 days from 08.03.2022 to 15.03.2022.

During the period, her conduct was found to be good.



Principal Prophetics & Technology

For VI Nicrosystems

N.P.R. College of Engineering & Technology Matham, Dindigul (Dt) - 624 401

Plot No.75, Electronics Estate, Perungudi, Chennai - 600096. Tel: 044-2496 1842, 2496 1852

E-mail: sales@vimicrosystems.com Website: www.vimicrosystems.com GSTIN: 33AAACV0909J1ZJ PAN No.: AAACV0909J

Date: 15.03.2022

#### **TO WHOM IT MAY CONCERN**

This is to certify that Mr.Akash S (920820106004) studying in Second year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone In-Plant training in our organization for 8 days from 08.03.2022 to 15.03.2022.

During the period, his conduct was found to be good.



With Regards

Plot No.75, Electronics Estate, Perungudi, Chennai - 600096.

Tel: 044-2496 1842, 2496 1852

E-mail: sales@vimicrosystems.com Website: www.vimicrosystems.com

GSTIN: 33AAACV0909J1ZJ PAN No.: AAACV0909J

Date: 15.03.2022

#### TO WHOM IT MAY CONCERN

This is to certify that Mr.Jeffery Albert J (920820106017) studying in Second year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone In-Plant training in our organization for 8 days from 08.03.2022 to 15.03.2022.

During the period, his conduct was found to be good.



Principal

hnology

With Regards
or VI Microsystems

Plot No.75, Electronics Estate, Perungudi, Chennai - 600096. Tel: 044-2496 1842, 2496 1852

E-mail: sales@vimicrosystems.com Website: www.vimicrosystems.com

GSTIN: 33AAACV0909J1ZJ PAN No.: AAACV0909J

Date: 15.03.2022

#### TO WHOM IT MAY CONCERN

This is to certify that Mr. Prasanna D (920819106046) studying in Third year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone Internship in our organization for 15 days from 24.02.22 to 10.03.22.

During the period, his conduct was found to be good.



With Regards

For VI Nicrosystems

Plot No.75, Electronics Estate, Perungudi, Chennai - 600096 Tel: 044-2496 1842, 2496 1852

E-mail: sales@vimicrosystems.com Website: www.vimicrosystems.com GSTIN: 33AAACV0909J1ZJ PAN No.: AAACV0909J

Date: 15.03.2022

#### TO WHOM IT MAY CONCERN

This is to certify that Mr. Ram Vignesh R P (920819106048) studying in Third year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone Internship in our organization for 15 days from 24.02.22 to 10.03.22.

During the period, his conduct was found to be good.



S Charles

With Regards

For VI Microsystem

Plot No.75, Electronics Estate, Perungudi, Chennai - 600096. Tel: 044-2496 1842, 2496 1852

E-mail: sales@vimicrosystems.com Website: www.vimicrosystems.com

GSTIN: 33AAACV0909J1ZJ PAN No.: AAACV0909J

Date: 15.03.2022

#### **TO WHOM IT MAY CONCERN**

This is to certify that Ms.Sharmila Devi G (920819106057) studying in Third year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone Internship in our organization for 15 days from 24.02.22 to 10.03.22.

During the period, his conduct was found to be good.

NATHAN PROPERTY OF THE PROPERT

Principal
N.P.R. College of Engineering & Technology

Natham, Dindigul (Dt) - 624 401

With Regards

For VI Nicrosystems

Plot No.75, Electronics Estate, Perungudi, Chennai - 600096.

Tel: 044-2496 1842, 2496 1852

E-mail: sales@vimicrosystems.com Website: www.vimicrosystems.com GSTIN: 33AAACV0909J1ZJ PAN No.: AAACV0909J

Date: 15.03.2022

#### **TO WHOM IT MAY CONCERN**

This is to certify that Ms. Shiny Reshma J (920819106058) studying in Third year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone Internship in our organization for 15 days from 24.02.22 to 10.03.22.

During the period, her conduct was found to be good.

N.P.R. College of Engineering & Technolog, Natham, Dindigul (Dt) - 624 401

With Regards

Plot No.75, Electronics Estate, Perungudi, Chennai - 600096 Tel: 044-2496 1842, 2496 1852

E-mail: sales@vimicrosystems.com Website: www.vimicrosystems.com

GSTIN: 33AAACV0909J1ZJ PAN No.: AAACV0909J

Date: 15.03.2022

#### TO WHOM IT MAY CONCERN

This is to certify that Ms. Sumuga Priya M (920819106062) studying in Third year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone Internship in our organization for 15 days from 24.02.22 to 10.03.22.

During the period, her conduct was found to be good.



Principal

Plot No.75, Electronics Estate, Perungudi, Chennai - 600096. Tel: 044-2496 1842, 2496 1852

E-mail: sales@vimicrosystems.com Website: www.vimicrosystems.com

GSTIN: 33AAACV0909J1ZJ PAN No.: AAACV0909J

Date: 15.03.2022

#### **TO WHOM IT MAY CONCERN**

This is to certify that Ms. Vishali K (920819106069) studying in Third year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone Internship in our organization for 15 days from 24.02.22 to 10.03.22.

During the period, her conduct was found to be good.

HATHAM S

Principal

With Regard

For VI Microsystem

Plot No.75, Electronics Estate, Perungudi, Chennai - 600096.

Tel: 044-2496 1842, 2496 1852

E-mail: sales@vlmicrosystems.com Website: www.vimicrosystems.com GSTIN: 33AAACV0909J1ZJ PAN No.: AAACV0909J

Date: 16.08.2021

### TO WHOM IT MAY CONCERN

This is to certify that Ms. Renuga Devi N (920819106049) studying in Third year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone In-Plant training in our organization for 08 days from 09.08.21 to 16.08.21.

During the period, her conduct was found to be good.

With Regards

Plot No.75, Electronics Estate, Perungudi, Chennai - 600096.

Tel: 044-2496 1842, 2496 1852

E-mail: sales@vimicrosystems.com Website: www.vimicrosystems.com

GSTIN: 33AAACV0909J1ZJ PAN No.: AAACV0909J

Date: 16.08.2021

#### TO WHOM IT MAY CONCERN

This is to certify that Ms. Rishwana Burveen S (920819106051) studying in Third year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone In-Plant training in our organization for 08 days from 09.08.21 to 16.08.21.

During the period, her conduct was found to be good.



With Regards

Plot No.75, Electronics Estate, Perungudi, Chennai - 600096.

Tel: 044-2496 1842, 2496 1852

E-mail: sales@vimicrosystems.com Website: www.vimicrosystems.com

GSTIN: 33AAACV0909J1ZJ PAN No.: AAACV0909J

Date: 16.08.2021

### TO WHOM IT MAY CONCERN

This is to certify that Ms. Sasmitha Parveen S (920819106054) studying in Third year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone In-Plant training in our organization for 08 days from 09.08.21 to 16.08.21.

During the period, her conduct was found to be good.



N.P.R. College of Engineering & Technology Matham, Dindigul (Dt) - 624 401.



With Regards



GST NO: 33AACCE2334E1ZA CIN No: U72200TN2006PTC060465







Date: 26.08.2021

#### TO WHOMSOEVER IT MAY CONCERN

This is to certify that the students of Third year ECE of NPR College of Engineering & Technology, Natham have successfully done the Internship in our concern from 11.08.21 to 26.08.2021.

During this period they were sincere and hardworking.

S.No.	Name of the student	Register Number	Year& Branch
1.	Mohan Babu B	920819106034	III ECE
2.	Muthu Moorthy M	920819106036	III ECE
3.	Prasanna D	920819106046	III ECE
	Singarabrindha N	920819106059	III ECE
4.	Vishali K	920819106069	III ECE
5.	Visitali K		





ozgatronica

Date: 09.08.2021

#### TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. AFRIN SHIFANA S (920819106002) doing Third year B.E, Electronics and Communication Engineering in NPR College of Engineering & Technology, Natham has undergone the In-plant training program offered by our organization during the period of 02.08.2021 – 09.08.2021.

We wish her every success in life.

(C.Kalman)



ronics

Date: 09.08.2021

### TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. BALAJI M(920819106009) doing Third year B.E, lectronics and Communication Engineering in NPR College of Engineering & echnology, Natham has undergone the In-plant training program offered by our rganization during the period of 02.08.2021 – 09.08.2021.

We wish him every success in life.





tronics

Date: 09.08.2021

#### TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. CHRISTIYA I (920819106011)** doing Third year E, Electronics and Communication Engineering in NPR College of Engineering & echnology, Natham has undergone the In-plant training program offered by our ganization during the period of 02.08.2021 – 09.08.2021.

We wish her every success in life.





tronice

Date: 09.08.2021

#### TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. DEVI SRI S (920819106012)** doing Third year B.E, electronics and Communication Engineering in NPR College of Engineering & echnology, Natham has undergone the In-plant training program offered by our reganization during the period of 02.08.2021 – 09.08.2021.

We wish her every success in life.

For Megatronic SATRO



Plot No.75, Electronics Estate, Perungudi, Chennai - 600096. Tel: 044-2496 1842, 2496 1852

E-mail: sales@vimicrosystems.com Website: www.vimicrosystems.com

GSTIN: 33AAACV0909J1ZJ PAN No.: AAACV0909J

Date: 24.08.2021

#### TO WHOM IT MAY CONCERN

This is to certify that Mr. Nandha kumar G (920819106041) studying in Third year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone Internship in our organization for 16 days from 09.08.21 to 24.08.21.

During the period, his conduct was found to be good.

N.P.R. College of Engineering & Technology Natham, Dindigul (Dt) - 624 401.

With Regards

Plot No.75, E' ctronics Estate, Perungudi, Chennai - 600096.

Tel: 044-2496 1842, 2496 1852

E-mail: sales@vimicrosystems.com Website: www.vimicrosystems.com GSTIN: 33AAACV0909J1ZJ PAN No.: AAACV0909J

Date: 24.08.2021

#### **TO WHOM IT MAY CONCERN**

This is to certify that Ms. Sharmila Devi G (920819106057) studying in Third year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone Internship in our organization for 16 days from 09.08.21 to 24.08.21.

During the period, her conduct was found to be good.

N.P.R. College of Engineering & Technology Natham, Dindigul (Dt) - 624 401.

icrosystems

Plot No.75, Electronics Estate, Perungudi, Chennai - 600096.

Tel: 044-2496 1842, 2496 1852 E-mail: sales@vimicrosystems.com Website: www.vimicrosystems.com

GSTIN: 33AAACV0909J1ZJ PAN No.: AAACV0909J

Date: 24.08.2021

#### TO WHOM IT MAY CONCERN

This is to certify that Ms. Sneha P (920819106060) studying in Third year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone Internship in our organization for 08 days from 09.08.21 to 24.08.21.

During the period, her conduct was found to be good.



Principal

S COMP

With Regards

For VI Nicrosystems

Plot No.75, Electronics Estate, Perungudi, Chennai - 600096. Tel: 044-2496 1842, 2496 1852

E-mail: sales@vimicrosystems.com Website: www.vimicrosystems.com

GSTIN: 33AAACV0909J1ZJ PAN No.: AAACV0909J

Date: 24.08.2021

#### TO WHOM IT MAY CONCERN

This is to certify that Mr. Tharun Kumar M (920819106065) studying in Third year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone Internship in our organization for 16 days from 09.08.21 to 24.08.21.

During the period, his conduct was found to be good.

With Regards

Plot No.75, F ectronics Estate, Perungudi, Chennai - 600096.

Tel: 044-2496 1842, 2496 1852

E-mail: sales@vimicrosystems.com Website: www.vimicrosystems.com

GSTIN: 33AAACV0909J1ZJ PAN No.: AAACV0909J

Date: 24.08.2021

#### TO WHOM IT MAY CONCERN

This is to certify that **Ms. Uma Nanthini N** (920819106066) studying in Third year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone Internship in our organization for 16 days from 09.08.21 to 24.08.21.

During the period, her conduct was found to be good.

Cherry 8

With Regards

For VI Nicrosystems



Ref: NPRCET/OFF/ECE/IV/2021-22

Date: 15.02.2022

To

The Centre Head,

Elysium Technologies,

Madurai.

Respected sir,

Sub: Seeking permission for one day visit to Elysium Technologies, Madurai - Reg.

Warm greeting from NPR College of Engineering & Technology.

62 Students and 3 faculties have planned to visit your Elysium Technologies, Madurai on 18.02.2022. The visit will be useful for our students to have a good practical knowledge about manufacturing of Electronics elements.

Looking forward for your permission.

Thank you



PRINCIPAL Dr. J.SUNDARARAJAN, B.E., M.Toch., Ph.D.,



### College of Engineering & Technology



Approved by AICTE, Affiliated to Anna University,

Accredited by NAAC WITH 'A' GRADE Recognized by UGC under 2 (f) Natham, Dindigul - 624 401. Web: www.nprcet.org

#### ACCEPTANCE MAIL FOR INDUSTRIAL VISIT TO ELYSIUM TECHNOLOGIES



NPR CET <nprcetece@nprcolleges.org>

#### Seeking Permission to visit your Company

2 messages

NPR CET <nprcetece@nprcolleges.org> To info@elysiumacademy.org

Fri.Feb 4,2022, at 02.31 PM

NPR College of Engineering & Technology. Natham, Dindigul is a reputed institution in Tamil Nadu affiliated to Anna University, Chennai. Weare offering Electronics and Communication Engineering as one of the course. Hereby I am looking for permission to Elysium Technologies, Madurai for the purpose of Industrial visit. So grant permission for students and staff coordinators to visit your company manufacturing unit on 18.02.2022

With regards,

Dr.S.M.Vijayarajan Assistant Professor/ECE, Department of Electronics and Communication Engineering, NPR College of Engineering and Technology, Natham - 624401

The Centre Head <info@elysiumacademy.org> To: NPR CET <nprcetece@nprcolleges.org>

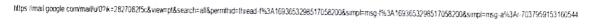
Fri, Feb 4, 2022, at 04.31 PM

Dear sir.

With reference to your mail, your college students are permitted to visit Elysium Technologies, Maduraion 18.02.2022. The centre is open from 1000hr to 1830hr on all days of the year except Government holidays. The entry and concession about your students should provide with official letter from your head of Institutions

With regards

ElysiumTechnologies, Madurai







### NPR





Approved by AICTE, Affiliated to Anna University,
Accredited by NAAC WITH 'A' GRADE Recognized by UGC under 2 (f)
Natham, Dindigul - 624 401. Web: www.nprcet.org

# DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING INDUSTRIAL VISIT TO ELYSIUM TECHNOLOGIES, MADURAI STUDENTS NAME LIST

S.No	Register No	Name
1	920820106001	AARTHY M
2	920820106002	AJAI GOWTHAM S
3	920820106003	AJITHA S
4	920820106004	AKASH S
5	920820106005	ARAVINTHAN S
6	920820106006	ARCHANA P
7	920820106007	ARIHARAN K
8	920820106008	BALASAKTHI S
9	920820106010	DHAARINI M J
10	920820106011	HAREESH V
11	920820106012	HARINI C
12	920820106014	HEMESWAR S
13	920820106015	JAWAHAR R
14	920820106016	JEEVA S
15	920820106017	JEFFERY ALBERT J
16	920820106020	MAHESWARIR
17	920820106021	MALAVIKA A
18	920820106022	MANIYAMMAIYAR N
19	920820106023	MANOJ S
20	920820106024	MEERA JAFRIN A
21	920820106025	MOHAMMED THOUFIQ AGARISH R
22	920820106027	NANDHINI A
23	920820106028	NIVETHITHA V
24	920820106029	PRAVEENKUMAR P
25	920820106032	SABEER AHAMED T
26	920820106033	SAI SANKARA NARAYANAN S
27	920820106034	SANDHIYA D
28	920820106035	SANJAI KUMAR S
29	920820106037	SELVA KUMAR M



30	920820106038	SIVAPRASAD K
31	920820106039	SIVARANJANI S
32	920820106041	SOUNDARYA LAKSHMI D
33	920820106042	SUPRAJA SURYAWANSHI
34	920820106044	THARANI V
35	920820106046	VASANTHAKUMAR M
36	920820106302	N.S.DHURGADEVI
37	920820106303	M.GAYATHRI
38	920819106002	AFRIN SHIFANA A
39	920819106003	AJITH KUMAR K
40	920819106007	ASMA ROSHAN T
41	920819106008	BALAJI M
42	920819106011	CHRISTIYA I
43	920819106012	DEVI SRI S
44	920819106021	JYOTHIKA B
45	920819106022	KAMALESH K
46	920819106034	MOHAN BABU B
47	920819106036	MUTHU MOORTHY M
48	920819106041	NANDHA KUMAR G
49	920819106046	PRASANNA D
50	920819106048	RAMVIGNHESH R P
51	920819106049	RENUGA DEVI N
52	920819106051	RISHWANA BURVEEN S
53	920819106054	SASMITHA PARVEEN K
55	920819106057	SHARMILA DEVI G
56	920819106058	SHINY RESHMA J
57	920819106059	SINGARABRINDHA N
58	920819106060	SNEHA P
59	920819106062	SUMUGAPRIYA M
60	920819106065	THARUNKUMAR M
61	920819106066	UMA NANTHINI N
62	920819106069	VISHALIK

#### **FACULTY INCHARGES:**

S.NO	STAFF NAME	DESIGNATION	SIGN
1	Dr.S.M.VIJAYARAJAN	AP/ECE	and the second
2	Dr.S.PONMALAR	PROF/ECE	S. Ponnel
3	Mr.JG.SABARISH	AP/ECE	Hanas





## College of Engineering & Technology



Approved by AICTE, Affiliated to Anna University,
Accredited by NAAC WITH 'A' GRADE Recognized by UGC under 2 (f)
Natham, Dindigul - 624 401. Web: www.nprcet.org

#### **PHOTO GALLERY**



OUR ECE STUDENTS AT ELYSIUM TECHNOLOGIES, MADURAI on 18.02.2022

HoD - ECE

Head of the Department

Department of Electronics & Communication Engineeri

NPR College of Enrineering & Trumplogy 11 6244-

Principal

Dr. LSUNDARARAJAN,

B.E., M.Tech., Ph.D.,

Priecipal



### **NPR**

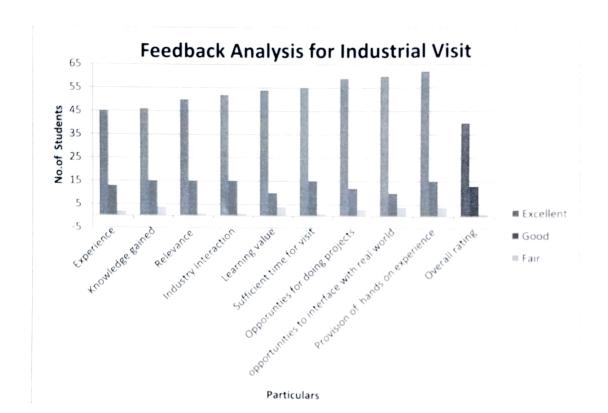
#### College of Engineering & Technology



Approved by AICTE, Affiliated to Anna University,

Accredited by NAAC WITH 'A' GRADE Recognized by UGC under 2 (f)

Natham, Dindigul - 624 401. Web: www.nprcet.org





Dr. J.SUNDARARAJAN, B.E., M.Tuch., Ph.D.

Principal
N.P.R. College of Engineering & Technology
Notham, Dindigul (Dt) - 624 461.