NPR College of Engineering & Technology

NPR Nagar, Natham, Dindigul - 624401, Tamil Nadu, India
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CRITERIA-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) (10)

Program name	Program Code	List of students undertaking project work/field work/internship	Page No
B.E. ECE	106	R.AKASH	58
B.E. ECE	106	R.ARUN PANDIAN	58
B.E. ECE	106	R.ATCHAYA	6
B.E. ECE	106	S.BALACHANDAR	14
B.E. ECE	106	V.BHUVANESHWARI	70
B.E. ECE	106	N.DEEPALAKSHMI	62
B.E. ECE	106	D.DEEPIKA	26
B.E. ECE	106	R.DEVADARSHINI	34
B.E. ECE	106	R.DHANALAKSHMI	18
B.E. ECE	106	S.DHARINI	22
B.E. ECE	106	A.K.GAYATHRI	22
B.E. ECE	106	I.GAYATHRI	38
B.E. ECE	106	M.GOWRI	42
B.E. ECE	106	N.ISWARYA	30
B.E. ECE	106	S.JANAKI	18
B.E. ECE	106	S.JEEVIDHA RAVEENA	22
B.E. ECE	106	M.KANMANI	62
B.E. ECE	106	B.KEERTHANA	6
B.E. ECE	106	K.KEERTHIKA	6
B.E. ECE	106	J.A.MADHUMITHA	42
B.E. ECE	106	V.MADHUMITHA	34
B.E. ECE	106	K.MAHESH BOOPATHI	66
B.E. ECE	106	T.S.MANIEKANTAN	14
B.E. ECE	106	M.G.MEENA VISHALI	38
B.E. ECE	106	M.MOHANAPRIYA	62
B.E. ECE	106	S.MOHANA PRIYA	70
B.E. ECE	106	M.K.MOHAN KUMAR	54
B.E. ECE	106	K.NIVETHA	34
B.E. ECE	106	P.PALANI KUMAR	66
B.E. ECE	106	G.S.POOJA	70
B.E. ECE	106	G.PREETHI	30
B.E. ECE	106	S.RAJALAKSHMI	46
B.E. ECE	106	M.SAKTHIVEL	10
B.E. ECE	106	M.SANDHURU	54
B.E. ECE	106	A.SANGEETHA	38
B.E. ECE	106	C.SARAVANAKUMAR	66

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			14
B.E. ECE	106	SATHEESH KUMAR.T	58
B.E. ECE	106	SATHISH.K	54
B.E. ECE	106	SELVAMANI.K.K	26
B.E. ECE	106	SHANMUGAPRIYA.C	50
B.E. ECE	106	SHEMA.S	30
B.E. ECE	106	SIVARANJANI.C	50
B.E. ECE	106	V.SOUNDARIYA	10
B.E. ECE	106	SOWLASH KUMAR.G	42
B.E. ECE	106	SRI DHARSHINI.T	10
B.E. ECE	106	SRI RAM.G	26
B.E. ECE	106	SUJITHA.M	18
B.E. ECE	106	TAMIL SELVI.S	102
B.E. ECE	106	DHARSHINI.V	81
B.E. ECE	106	DURGADEVI.S	81
B.E. ECE	106	KIRUTHIKA.R	81
B.E. ECE	106	MUTHU VIGNESH.M	102
B.E. ECE	106	NIVETHA.K.S	81
B.E. ECE	106	RAJKUMAR.K	102
B.E. ECE	106	SARUMATHI.R	81
B.E. ECE	106	SEEMA FATHIMA.S	102
B.E. ECE	106	SWETHA.M	81
B.E. ECE	106	VARSHIINI.B	46
B.E. ECE	106	AKILA S	46
B.E. ECE	106	THARALAKSHMI S	88
B.E. ECE	106	AFRIN SHIFANA A	88
B.E. ECE	106	BALAJI M	88
B.E. ECE	106	CHRISTIYA I	88
B.E. ECE	106	DEVI SRI S	88
B.E. ECE	106	PORKODI S	88
B.E. ECE	106	DHATH VETHA S	94
B.E. ECE	106	JYOTHIKA B	94
B.E. ECE	106	KARUNIAA .J.S	94
B.E. ECE	106	KEERTHI M	94
B.E. ECE	106	MUTHU RANJANI V	94
B.E. ECE	106	PRASANNA D	100
B.E. ECE	106	SINGARABRINDHA N	100
B.E. ECE	106	VISHALI K	100
B.E. ECE	106	MOHANBABU B	100
B.E. ECE	106	MUTHU MOORTHY M	100

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Class: IV ECE   ACADEMIC YEAR : 2020-21

EC8811-PROJECT WORK SEHEDULE   Date of Exam : 02.08.2021

S. NO	TIME	REGISTER NO	STUDENTS NAME	PROJECT TOPIC	GUIDE	DOMAIN NAME
1	09.30 – 9.45AM	920817106007	R.ATCHAYA	Design Of A Hexagonal Labyrinth Implantable Antenna For Biotelemetry Applications	Mr.S.M.Vijayarajan AP/ECE	Antenna
		920817106032	B.KEERTHANA			
		920817106033	K.KEERTHIKA			
2.	09.45 – 10.00AM	920817106019	S.DHARINI	IOT Based Data Logger And Collision Control	Mr.K.Jaya prakasam AP/ECE	Embedded system
		920817106021	A.K.GAYATHRI			
		920817106028	S.JEEVIDHARAVEENA			
3	10.00 – 10.15AM	920817106022	I.GAYATHRI	Automatic CNN Based COVID-19 Lung Infection Segmentation from CT Images Using Deep Learning	Dr.A.Gopi saminathan HOD/ECE	Image Processing
		920817106039	M.G.MEENA VISHALI			
		920817106054	A.SANGEETHA			
4	10.15 – 10.30AM	920817106018	R.DHANALAKSHMI	Design Technique for ATM Based on Fingerprint Sensor Technology-	Dr.A.Gopi saminathan HOD/ECE	Embedded system
		920817106027	S.JANAKI			
		920817106071	TAMIL SELVI.S			
5	10.30 – 10.45AM	920817106060	SHEMA.S	An Embedded Based Contactless COVID Free Switches For Social Distancing	Mr.K.Jayaprakasam AP/ECE	Embedded system
		920817106064	V.SOUNDARIYA			
6	10.45 – 11.00AM	920817106015	N.DEEPALAKSHMI	Automatic Multimode Floor Disinfecting ROBOT for COVID-19 Prevention	Mr.K.Jayaprakasam AP/ECE	Embedded system
		920817106031	M.KANMANI			
		920817106040	M.MOHANAPRIYA			
7	11.00 – 11.15AM	920817106017	R.DEVADARSHINI	Designing of IOT Based on Compact Modular BITE Force Measurement System of Dental Application	Mr.S.Sudhakar AP/ECE	Embedded system
		920817106035	V.MADHUMITHA			
		920817106044	K.NIVETHA			
8	11.15 –	920817106061	SHIFA PARVEEN.S	Universal Robot Employment To	Mrs.C.Kannigaparamesw	Embedded

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	Time	Reg No	Name	Project Title	Guide	Domain
	11.30AM	920817106070	SURYA KALA.V	MIMIC Human Writing	ari AP/ECE	system
		920817106072	THANGAKALYANI.K.S			
9	11.30 – 11.45AM	920817106010	V.BHUVANESWARI	QCA Design Of Code Converters For Nano Communication	Ms.S.Monika AP/ECE	VLSI
		920817106041	S.MOHANA PRIYA			
		920817106047	G.S.POOJA			
10	11.45 – 12.00PM	920817106049	S.RAJALAKSHMI	LORA Based Secure Wireless Soldier Monitoring System	Mr.JG.Sabarish AP/ECE	Embedded system
		920817106073	S.THARA LAKSHMI			
		920817106701	S.AKILA			
11	12.00 – 12.15AM	920817106026	N.ISWARYA	Effective Brain Signal state Detection Using Convolutional Neural Network	Mr.S.Sudhakar AP/ECE	Image Processing
		920817106048	G.PREETHI			
		920817106063	SIVARANJANI.C			
12	12.15 – 12.30PM	920817106023	M.GOWRI	Detection Of Face Morphing Attacks Based on Half Toning feature Extraction	Mr.JG.Sabarish AP/ECE	Image Processing
		920817106034	J.A.MADHUMITHA			
		920817106066	SRI DHARSHINI.T			
13	01.30 – 1.45PM	920817106016	D.DEEPIKA	Weather sensible Smart Adaptable device With Location and Health Monitoring system	Mrs.C.Kannigaparameswari AP/ECE	Embedded system
		920817106059	SHANMUGAPRIYA.C			
		920817106069	SUJITHA.M			
14	01.45 – 02.00PM	920817106004	R.AKASH	Effective Prediction Of Wind Power By ANN (Artificial Neural Network) Using Machine Learining	Mr.S.M.Vijayarajan AP/ECE	Neural Network
		920817106006	R.ARUN PANDIAN			

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		920817106057	SATHISH.K			
15	02.00 – 02.15PM	920817106008	S.BALACHANDAR	Recognition Of Fly Species Based On Improved Resnet For Agriculture	Mr.S.Sudhakar AP/ECE	Image Processing
		920817106037	T.S.MANIKANDAN			
		920817106056	SATHEESH KUMAR.T			
16	02.15 – 02.30PM	920817106042	M.K.MOHAN KUMAR	SHIP DETECTION IN MEDIUM-RESOLUTION SAR IMAGES VIA VGG NET	Mr.JG.Sabarish AP/ECE	Image Processing
		920817106053	M.SANDHURU			
		920817106058	SELVAMANI.K.K			
17	02.30 – 02.45PM	920817106036	K.MAHESH BOOPATHI	Design And Implementation Of Bipedal Robot For Bomb Detection	Mr.S.M.Vijayarajan AP/ECE	Embedded system
		920817106045	P.PALANI KUMAR			
		920817106055	C.SARAVANAKUMAR			
18	02.45 – 03.00PM	920817106051	M.SAKTHIVEL	Low Cost Protectable ALU Design	Mrs.C.Kannigaparameswari AP/ECE	VLSI
		920817106065	SOWLASH KUMAR.G			
		920817106068	SRI RAM.G			

PROJECT CO-ORDINATOR   HOD/ECE

DESIGN OF A HEXAGONAL LABYRINTH IMPLANTABLE ANTENNA FOR BIOTELEMETRY APPLICATIONS

A PROJECT REPORT

Submitted by

R.ATCHAYA   (920817106007)

B.KEERTHANA   (920817106032)

K.KEERTHIKA   (920817106033)

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

April 2021

ANNA UNIVERSITY:CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report **"DESIGN A HEXAGONAL LABYRINTH IMPLANTABLE FOR BIOTELEMETRY APPLICATIONS"** is the bonafide work of **"R.ATCHAYA (920817106007) , B.KEERTHANA (920817106032) , K.KEERTHIKA (920817106033)"** who carried out the project work under my supervision.

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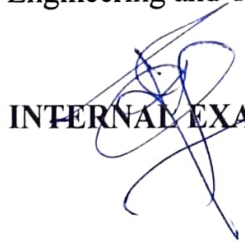
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Submitted for the project work and viva-voce examination held at NPR College Of Engineering and Technology in Natham on ___09.08.2021___ .

INTERNAL EXAMINER

EXTERNAL EXAMINER

ABSTRACT

The health care industry is continuously revolutionizing and advancing towards developing more efficient system suitable for human body. Today implantable devices have become a more interesting topic in health care services which primarily started with the pacemakers. Since then it is continuously evolving due to its non-invasive nature, instant monitoring and diagnosis, and periodic simulation. In this work, a novel Hexagonal Labyrinth implantable antenna has been proposed for medical applications to be operated in medical band. The biocompatible polyamide substrate with 0.05 mm thickness has been used as both substrate and superstrate. The proposed antenna is featured with very good miniaturization with the dimensions of 6× 6×0.1 mm3 by employing circular maze shaped structure in radiator. The performance of the proposed antenna was evaluated by placing in a realistic human model using HFSS. The simulated results for the gain and reflection coefficient exhibited reasonable agreement. The safety of the antenna was verified according to the IEEE SAR regulation. The analysis of the link budget revealed that the antenna can perform reliable wireless communication.

CHAPTER-8
CONCLUSION AND FEATURE WORK

A miniaturized dual-band CP antenna was designed and experimentally validated for WCE applications. The optimum performance and miniaturization of the antenna were achieved via the introduction of slots in the radiating patch. The surface current distribution was visualized to confirm the circular polarization of the antenna. The impedance BW and AR BW of the antenna covered the desired frequency bands. The performance of the proposed antenna was evaluated by placing in a realistic human model using HFSS. The simulated results for the gain and reflection coefficient exhibited reasonable agreement. The safety of the antenna was verified according to the IEEE SAR regulation. The analysis of the link budget revealed that the antenna can perform reliable wireless communication.

FEATURE WORK

Reactive components are included to realize the impedance matching, as well as those requirements for the generation of CP waves. Simulations are conducted within a single-layer tissue model to evaluate the antenna's performance. The proposed antenna exhibits a low profile, which is smaller than 1 mm even including two coating layers. The antenna also behaves good robustness to different implant depths and thicknesses of biocompatible coating, due to its wide axial ratio bandwidth ranging from 2.331 to 2.582 GHz. A prototype is fabricated and experimentally demonstrated in a solid skin-mimicking phantom. A measured impedance bandwidth of 621 MHz is achieved for the 2.4-2.48-GHz Industrial Scientific Medical band. Good agreement between simulation and measurement can be observed in the far-field measurement. The link budget is also evaluated, together with an exterior CP patch antenna.

Dr. J.SUNDARARAJAN,
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LOW COST PROTECTABLE ALU DESIGN

A PROJECT REPORT

Submitted by

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SOWLASH KUMAR G (920817106065)

SRIRAM G (920817106068)

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in

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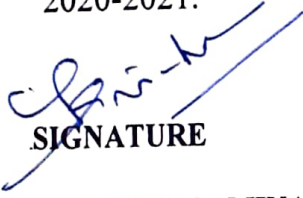
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NATHAM, DINDIGUL.

ANNA UNIVERSITY :: CHENNAI 600 025,

APRIL 2021

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BONAFIDE CERTIFICATE

Certified that this project report **"LOW COST PROTECTABLE ALU DESIGN"** is the Bonafede work of **SAKTHIVEL M (920817106051)**, **SOWLASH KUMAR G (920817106065)**, **SRIRAM G(920817106068)** who carried out the project work under my supervision, during the academic year 2020-2021.

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INTERNAL EXAMINER

EXTERNAL EXAMINER

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ABSTRACT

Today, the entire device's in electronics needs to be realized with low power and optimized Area architectures because of power consumption and Area are of main consideration along with other performance parameters. Low power consumption helps to reduce heat dissipation, increases battery life and also reliability. Arithmetic and Logic Unit (ALU) is one of the frequent and the most fundamental component in low power processor design. The use of microprocessors in space missions implies that they should be protected against the effects of cosmic radiation. Commonly this objective has been achieved by applying modular redundancy techniques which provide good results in terms of reliability but increase significantly the number of used resources. Because of that, new protection techniques have appeared, trying to establish a trade-off between reliability and resource utilization. In this work, we propose an application-based methodology, to protect a soft processor implemented in an SRAM-based FPGA, against the effect of soft errors. This is done creating a library of adaptive protection configurations, based on the profiling of the application. This hardware configuration library, combined with the reprogramming capabilities of the FPGA, helps to create an adaptive protection for each application. Propose low cost voting based partial TMR configurations for the Arithmetic Logic Unit (ALU) as an example of this methodology. The proposed scheme has been tested in a SPARTAN FPGA. A fault injection campaign has been performed to test its reliability.

CHAPTER 11

CONCLUSION & FUTURE WORKS

In this work a methodology to protect the ALU of a soft processor against the effect of SEU sin the configuration memory has been presented.The methodology is based on the construction of a catalog composed of fault tolerant designs of the ALU. Each of these designs is focused on a particular application that is going to be executed in the microprocessor.Results show that the protected circuits achieve significant fault tolerance levels while reducing the required resource overhead by tailoring the protection scheme to the application,specially compared with the full TMR.Since a microprocessor can run multiple programs, the creation of a catalog with multiple designs for each application is perfect for a programmable device. The reconfiguration capabilities of SRAM-based FPGAs, as well as the short time required to perform this operation, make them the perfect platform for our methodology. Compared to TMR, the overhead in area is reduced at the cost of slightly decreasing its fault tolerance, which makes it interesting in order to reduce the number of resources and power consumption.

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RECOGNITION OF FLY SPECIES BASED ON IMPROVED RESNET FOR AGRICULTURE

A PROJECT REPORT

Submitted by

SATHEESH KUMAR .T	**(920817106056)**
MANIEKANTAN .T.S	**(920817106037)**
BALACHANDAR.S	**(920817106008)**

in partial fulfillment for the award of the degree

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ANNA UNIVERSITY :: CHENNAI 600 025,

APRIL 2021

ANNA UNIVERSITY : CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report "RECOGNITION OF FLY SPECIES BASED ON IMPROVED RESNET FOR AGRICULTURE" is the Bonafide work of SATHEESH KUMAR.T (920817106056), MANIEKANTAN.T.S (920817106037), BALACHANDAR.S(920817106008)" who carried out the project work under my supervision, during the academic year 2020-2021.

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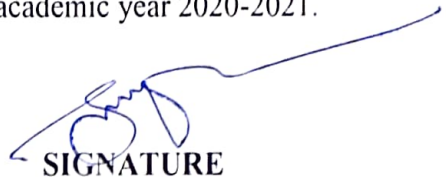
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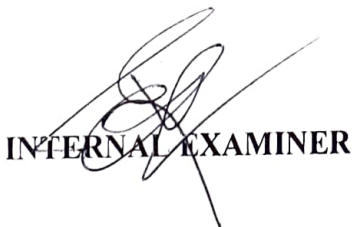
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Submitted for the project viva-vocc examination held at NPR College of Engineering and Technology in Natham on_____.

INTERNAL EXAMINER

EXTERNAL EXAMINER

ABSTRACT

A dozen species of locusts (Orthoptera: Acrididae) are a major threat to food security worldwide. Their outbreaks occur on every continent except Antarctica,threatening the livelihood of 10% of the world's population. The locusts are infamous for their voracity, polyphagy, and capacity for long-distance migrations.For effective control, the insects need to be detected on the ground before they start to develop air borne swarms. Detection systems need to determine pest density and location with high speed and accuracy. Location of the swarms on the ground then enables their control by the application of pesticides and bio-pesticides. This work proposes a locust species recognition method based on ResNet50 -convolutional neural network (CNN).ARDUINO and GSM based hardware setup integrated with image processing unit for alerting purpose. In the event of detection of locust, an alert is sent to a fixed base station (BS). As a prototype, we have tested this hardware on real time, which shows that the proposed approach is very efficient in terms of flexibility and cost.

CHAPTER 9
CONCLUSION AND FUTURE WORK

In this project, we propose a locust recognition method based on improved ResNet, which accurately locates and recognizes flies. We designed the learning structure and introduced a bottom-up path augmentation to improve the low-level features semantic information and the high-level features location ability. The experimental results show that our proposed method have better performance compared with the state-of-the-art methods for fly species recognition. This is of great significance for the species recognition.

Future work

- Hybrid net used for segmentation and classification

- Hybrid net formed by combing two or three different architecture by modifying hidden layers

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DESIGN TECHNIQUE FOR ATM BASED ON FINGERPRINT SENSOR TECHNOLOGY

A PROJECT REPORT

Submitted by

R.DHANALAKSHMI	**(920817106018)**
S.JANAKI	**(920817106027)**
S.TAMILSELVI	**(920817106071)**

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

APRIL 2021

i

ANNA UNIVERSITY: CHENNAI 600 025
BONAFIDE CERTIFICATE

Certified that is project report **"DESIGN TECHNIQUE FOR ATM BASED ON FINGERPRINT SENSOR TECHNOLOGY"** is the Bonafide work of **"R.DHANALAKSHMI(920817106018)   S.JANAKI(920817106027), S.TAMIL SELVI(920817106071)"** who carried out the project work under my Supervision

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Dr.A.GOPI SAMINATHAN M.E.,PH.D.,

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Professor,

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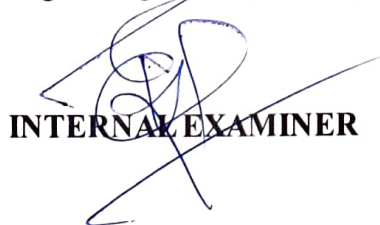
Communication engineering

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Submitted for the project work and viva-voce examination held at NPR college of Engineering and Technology in Natham on____2.08.21____

INTERNAL EXAMINER

EXTERNAL EXAMINER

ii

ABSTRACT

Identification and verification of a person today is a common thing; which may include door-lock system, safe box and vehicle control or even at accessing bank accounts via ATM, etc which is necessary for securing personal information. The conventional methods like ID card verification or signature does not provide perfection and reliability. The systems employed at these places must be fast enough and robust too. Use of the ATM (Automatic Teller Machine) which provides customers with the convenient banknote trading is facing a new challenge to carry on the valid identity to the customer. Since, in conventional identification methods with ATM, criminal cases are increasing making financial losses to customers. Authors design a simple fingerprint recognition system using LPC2148 as a core controller. The system uses FIM3030 fingerprint scanner to capture fingerprints with its DSP processor and optical sensor. This system can be employed at any application with enhanced security because of the uniqueness of fingerprints. It is convenient due to its low power requirement and portability.

CHAPTER-9

CONCLUSION AND FUTURE WORK

After testing the system developed, we came to know that ATM prototype can be efficiently used with fingerprint recognition. Since, password protection is not bypassed in our system, the fingerprint recognition done after it yielded fast response and is found to be of ease for use. Fingerprint images cannot be recreated from templates; hence no one can misuse the system. LPC2148 and FIM3030 provide low power consumption platform. Speed of execution can be enhanced with the use of more sophisticated microcontroller. The same hardware platform can be used with IRIS scanner to put forward another potential biometric security to the ATMs.

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IOT BASED DATA LOGGER AND

COLLISION CONTROL

A PROJECT REPORT

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ii

ABSTRACT

Traffic in our country is increasing day by day. Many people are not giving a good response for the traffic rules in many places. Mainly accidents happen due to over speed and careless driving. Especially, in the school and the college zone, people are hesitating for decreasing the speed to its limit. This is embedded project to indicate the over speed and to control the vehicle in the over speed condition. This is constructed with the wireless communication. Given below is the block diagram of the project. We are using PIC16F877A which is Programmable IC microcontroller. To check the tyre temperature, we have interfaced temperature sensor indicate the occurrence of high temperature and alert the vehicle driver via alarm. The accident information system will alert vehicle owner relative or nearby hospital through IOT with the accident location using GPS. If the accident is a minor one then driver can press the reset switch and drive normally. Brake failure sensor, will indicate if the brake wire is connected properly or not and pressure sensor will check the correct air pressure of the tyre, else alert the driver. Accelerator, brake clutch and steering position sensor indicate the position of accelerator, brake clutch steering respectively. We can monitor and control all with the help of IOT module.

CHAPTER 7

CONCLUSION AND FUTURE WORK

This paper has presented a new vision for the vehicles industry, which is the Black Box system used for vehicles. A full and detailed description was made for every part of this system. This paper has also offered a user Internet of thing based data of the accident. In addition, the transmission method between the two parts has been introduced and developed. The Black Box system built can be implemented in any vehicle. As soon as the driver runs the motor, this system will begin saving the events of the corresponding vehicle. The last 21 seconds are always saved in the EEPROM of the Black Box, and in case of an accident, an additional 10 seconds of events after this accident will be saved. The data saved can be retrieved only after the accident for privacy purposes. Using serial transmission, a PIC program will read the data from the EEPROM and display it to the user in Graphical format in the cloud server. In addition, a detailed report will be given to the user containing all necessary information.

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WEATHER SENSIBLE SMART ADAPTABLE DEVICE WITH LOCATION AND HEALTH MONITORING SYSTEM

A PROJECT REPORT

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ABSTRACT

Cold-weather warfare, also known as Arctic warfare or winter warfare, encompasses military operations affected by snow, ice, thawing conditions or cold, both on land and at sea. Cold-weather conditions occur year-round at high elevation or at high latitudes, and elsewhere materialise seasonally during the winter period. Mountain warfare often takes place in cold weather or on terrain that is affected by ice and snow, such as the Alps and the Himalayas. Mountain Training recognises that climbing, hill walking and mountaineering are activities with a danger of personal injury or death. Participants in these activities should be aware of and accept these risks and be responsible for their own actions. In this project, we proposed a wearable device. for a fast-rescuing system of soldiers when they are at risks and also taking cause for their health issues. This system consists of controller, safety button, heart rate sensor, temperature sensor, GPS tracker, GSM respectively

CHAPTER 7

CONCLUSION AND FUTURE WORK

This Project proposed a smart system for disaster detection, prediction, and response for trucking people. It designed the main five building blocks of the envisioned system, as well as highlighted the main technologies to be considered in each building block. In addition, the motivation for the interaction between the components of our system was highlighted, as well as how these interactions will happen. Finally, we discussed some of the main challenges that will be addressed in the future works, towards the implementing the proposed smart system.

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EFFECTIVE BRAIN SIGNAL STATE DETECTION USING COVOLUTIONAL NEURAL NETWORK

A PROJECT REPORT

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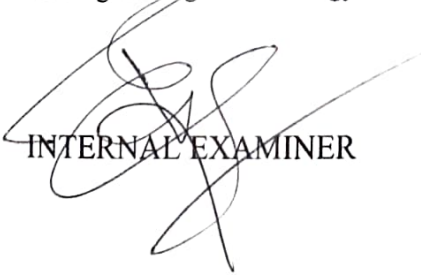
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INTERNAL EXAMINER

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ii

ABSTRACT

In recent years, advanced neurocomputing and machine learning techniques have been used for Electroencephalogram (EEG) based diagnosis of various neurological disorders. EEG signals are one of the most important means of indirectly measuring the state of the brain. Depression affects large number of people across the world today and it is considered as the global problem. It is a mood disorder which can be detected using EEG signals. The existing depression algorithms have lack of efficient feature selection techniques to improve the performance of a subsequent classifier. In our proposed work, a novel computer model is presented for EEG based screening of depression using a deep neural network machine learning approach, known as Convolutional Neural Network (CNN). It learns automatically and adaptively from the input EEG signal to differentiate EEGs obtained from depressive and normal subjects. The performance of the proposed method is evaluated using the physionet, which is the publicly available EEG dataset. The results show that the method can find the optimal features and distinguish the two groups of subject. It effectively improves the classification accuracy

CHAPTER-7

CONCLUSION AND FUTURE WORK

CONCLUSION

Depression is a major health concern in millions of individuals. Thus, diagnosing depression in the early curable stages is critical for the treatment in order to save the life of a patient. However, current methods of depression detection are human-intensive, and their results are dependent on the experience of the doctor. Therefore, a pervasive and objective method of diagnosing or even screening would be useful.

The present work explores a novel method of depression detection using FIR filter and CNN based classification. Te results exhibited KNN as the best performance classification method in all datasets, with the highest accuracy of 79.27%. The MATLAB results also demonstrated the feature "absolute power of theta wave" in all the best performance features of the datasets, thereby suggesting a robust connection between the power of theta wave and depression .The overall accuracy of the proposed framework is found by 92%. This could be used as a valid characteristic feature in the detection of depression.

FUTURE WORK

It is a common problem in similar studies, a known limitation is the relatively low number of both depressed and control subjects. We anticipate on reporting on a larger dataset in the future. We can consider how to improve the various feature extraction algorithm in order to find the better features and to obtain the higher classification accuracy .Therefore, deep learning can be applied to big data sets in future work.

44

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DESIGNING OF IOT BASED ON COMPACT MODULAR

BITE FORCE MEASUREMENT SYSTEM DENTAL

APPLICATION

A PROJECT REPORT

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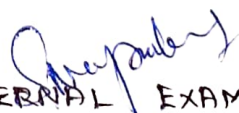
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INTERNAL EXAMINER

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ABSTRACT

The stomatognathic system is a very complex structure that includes the temporomandibular joint, masticatory muscles ,teeth, gingival, tongue , and pharynx. In this structure , maximum bite force measurement has been an important field of study in the diagnosis and treatment of diseases caused by disorders related to chewing habits. Since existing measurement system are expensive and impractical , researchers are in search of better system. In this project , a modular and low cost IOT based system has been developed to measure the bite force accurately in home . The sensor data read by the microprocessor were converted to force values by the optimum curve fitting methods and results are instantly displayed on the user to obtain the best results according to the goodness -of -fit statistics . The exponential equations was selected as the curve fitting method from the results of the goodness -of-fit statistics . The result were verified and system was calibrated by comparing the applied force values and system results.

CHAPTER 7

CONCLUSION AND FUTURE WORK

In our project we are designing an iot based on low cost compact modular system to measure the bite force accurately at home . By using flexi force pressure sensor we can measure the pressure of the teeth simply at home and also we can measure the temperature of our body and heart beat rate. Simple and efficient design of the measurement system gives opportunity to use different sensors in future studies. This makes more precise and higher force measurements possible. We believe that this study has made significant contributions and innovations in the dental field. Also, simple and efficient design of the measurement system gives opportunity to use different sensors in future studies.

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AUTOMATIC CNN BASED COVID-19 LUNG INFECTION SEGMENTATION FROM CT IMAGES USING DEEP LEARNING

A PROJECT REPORT

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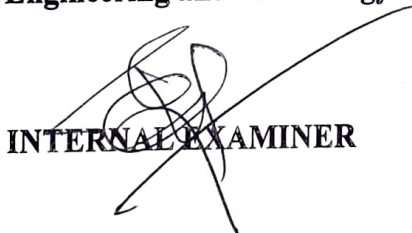
EXTERNAL EXAMINER

ABSTRACT

Our project is about automated detection of lung infections from computed tomography (CT) images. It offers a great potential to augment the traditional healthcare strategy for tackling COVID-19. However, segmenting infected regions from CT slices faces several challenges, including high variation in infection characteristics, and low intensity contrast between infections and normal tissues. And also collecting a large amount of data is impractical within a short time period, inhibiting the training of a deep model. To overcome these challenges, a novel COVID-19 Lung Infection Segmentation Deep Network (Inf-Net) is proposed to automatically identify infected regions from chest CT slices. In our project, a parallel partial decoder is used to aggregate the high-level features and generate a global map. Our semi-supervised framework can improve the learning ability and achieve a higher performance.

CHAPTER 8
CONCLUSION & FUTURE WORK

Deep learning practices are an area where high scientific achievements are obtained in different scientific fields day by day. One of these fields is medical practices and studies such as disease detection, disease classification, and location of the disease are carried out. Dataset were performed as input data to the SqueezeNet network using image processing techniques. The network, achieved higher accuracy. SqueezeNet structure, which has been used less than other popular deep learning methods in previous studies, combined with image processing methods, has shown a successful result.

In future, we planned to apply our Resnet – 50 to other related tasks such as polyp segmentation and camouflaged animal detection.

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DETECTION OF FACE MORPHING ATTACKS

BASED ON HALFTONING FEATURE EXTRACTION

A PROJECT REPORT

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INTERNAL EXAMINER

EXTERNAL EXAMINER

ii

ABSTRACT

Due to the advances in computer-based communication and health services over the past decade, the need for image security becomes urgent to address the requirements of both safety and non-safety in all applications. Methods of authentication and selfrecovery of tampered information in digital images have been in constant development during the last years. Face verification is a popular way for verifying identities in access control systems. In this work, a half toning based morphing attack (MA) detection is proposed to compromise the uniqueness of face templates. Different from existing research, this work changes MA from a holistic face level to component level, and only the most effective facial components (eyes and nose) are used. Therefore, a manipulated face is more similar to a bona fide one in terms of visual quality, texture, and noise characteristics. To validate the effectiveness of the proposed attack, a novel metric called actual mated morph presentation match rate (AMPMR) is proposed to evaluate MA performance under real-world conditions. With a collected dataset containing different attack types, image qualities, and manipulation parameters, the results indicate the proposed attack has better anti-detectability compared with the existing complete, splicing, and combined MAs. Moreover, it has low visual distortion and can reach a better tradeoff among facial biometrics verification, anti-detectability, and visual differences.

CHAPTER 7

CONCLUSION AND FUTURE WORK

Watermarking is a crucial technique in the copyright identification mechanisms of digital assets. It is widely recognized as one of the key issues of data copyright protection in this work we considered the defect of traditional watermarking schemes, while dealing with the nonnumeric attributes. This project presents a LU and halftoing based tamper detection scheme using grouped block method to offer more security and provide a supplementary way to locate the attacked areas inside different medical images. Two authentication bits namely block authentication and self-recovery bits were used to survive the vector quantization attack. The usage of authendication makes it possible to recover the tampered region from the neighboring blocks, which ultimately increases the NCC and PSNR of the recovered host. In future this concept will be helpul to resolve the challenges faced by police department and medical field now this featurehelps to detect the biometric features like eyes, nose, ears in later days it will help to the entire physical features in biological features in images.

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LORA BASED SECURE WIRELESS SOLDIER MONITORING SYSTEM

A PROJECT REPORT

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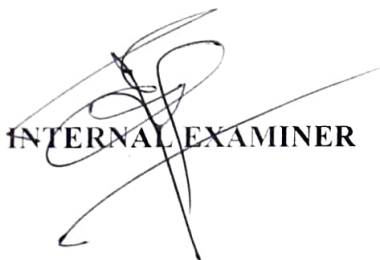
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INTERNAL EXAMINER

EXTERNAL EXAMINER

ii

ABSTRACT

During wars and military search operations, soldiers gets injured and sometime becomes losses. To find soldiers and provide health monitoring, army base station and need Global Position System device for locating soldiers, wireless base station to sense health related parameters of soldiers and a wireless transceiver to transmit the data wirelessly. Upon losing in the battlefield it is necessary for the base station to guide the solider. The base station can access the current status of the soldier which is displayed on the camp. The proposed system can be mounted on the soldier's body to track their health status and current location using Global Positioning System. These information will be transmitted to the control room through LoRa wireless module. The proposed system comprise of tiny wearable physiological devices, sensors, transmission modules. Hence, with the use of the proposed system, it is possible to implement a low cost mechanism to protect the valuable human life.

CHAPTER-10

CONCLUSION AND FUTURE WORK

From the proposed system, we can conclude that we are able to transmit the data which is sensed from remote soldier to the squad leader and other soldiers using LoRa transceiver and from the squad leader to the control unit using LoRa as the transmission technology. This system helps to monitor the health parameters of soldier, track their position using various sensors. The system helps the soldier to get help from army control unit and/or from other fellow soldiers in panic situation. It will prove to be very useful to military forces during war and rescue operations as it can be used without any network restriction using LoRa. Thus, this system provides security and safety to our soldiers.

With this new approach we are implementing a technique to enhance the security level of soldiers and further to reduce the time to receive the information. In future work, we will focus on reducing the emergency condition of soldiers for a long time in rushed area and it reduces the time to find problems on the main areas. In this project we are using Arduino-1.8.13-Windows version for implementing. It is possible to implement a low cost mechanism to protect the valuable human life. In soldier security the movement view can be implements for future works it represents in the present actions like standing, sitting, etc..,

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AN EMBEDDED BASED CONTACTLESS COVID FREE SWITCHES FOR SOCIAL DISTANCING

A PROJECT REPORT

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INTERNAL EXAMINER

EXTERNAL EXAMINER

ABSTRACT

In present situations, social distancing is the most important fact. Furthermore, the fact is COVID-19 patient's first spread is direct contact or touching. The reason why, need to touch in switches, ATM and in all public place, but needs to maintain social distancing. While traditional switches can't make sure of social distancing, where our developed contactless switches can achieve control by using Arduino as the main control device as well as the infrared (IR) sensor. As a result, it would be used everywhere because of its easy-handling.

CHAPTER 9
CONCLUSION & FUTURE WORK

The system depicts the development of contactless switches. Where we are fighting against unseen viruses which increase day by day contacting by person to person. So we need to maintain social distancing and need to ON/OFF electrical load without any contact. This system will help for making any contactless load control without contact. In addition, the contactless switch is more advantageous in the application especially in public places. The system is successfully implemented and evaluated using highly advanced ICs and with the help of growing technology.Finally,it would be used everywhere in future because of its easy handling and high security.

FUTURE WORK

The Coronavirus disease will say bye to the biometric attendance system thus contactless attendance systems will rise in future. Technology is going to touch every aspect of our being. Not only will we see faster adoption of disruptive solutions already available, but this pandemic is also going to fast track innovations that will enable a contactless world.

Dr. J.SUNDARARAJAN,
B.E., M.Tech., Ph.D.,
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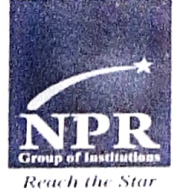
SHIP DETECTION IN MEDIUM-RESOLUTION SAR IMAGES VIA VGG NET

A PROJECT REPORT

Submitted by

MOHAN KUMAR.M.K   (920817106042)

SANDHURU.M   (920817106053)

SELVAMANI.K.K   (920817106058)

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,

APRIL 2021

i

ANNA UNIVERSITY : CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report **"SHIP DETECTION IN MEDIUM-RESOLUTION SAR IMAGES VIA VGG NET"** is the Bonafede work of **MOHAN KUMAR.M.K (920817106042), SANDHURU (920817106053), SELVAMANI.K.K (920817106058)"** who carried out the project work under my supervision, during the academic year 2020-2021.

SIGNATURE

Dr.A.GOPI SAMINATHAN M.E., Ph.D.,

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Dindigul – 624 401.

SIGNATURE

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

SUPERVISOR

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

INTERNAL EXAMINER

EXTERNAL EXAMINER

ABSTRACT

Synthetic aperture radar (SAR), due to its noticeable advantages of working all-day and in various weather conditions, has become a significant device for many remote sensing applications. Synthetic aperture radar (SAR), due to its noticeable advantages of working all-day and in various weather conditions, has become a significant device for many remote sensing applications. In this work, we propose a ship detection method for remote images based on VGG net-based convolutional neural network. The main improvements include proposal generation by adopting multi-level features produced by the convolution layers, which fits ships with different sizes, and the addition of a Deep Convolutional Neural Network (DCNN)-based classifier for training sample generation and coast mitigation. The proposed method was tested with the collected images and the improved accuracy of detection in experimental results.

CHAPTER 7

CONCLUSION AND FUTURE WORK

This project proposed a multitask learning framework for ship detection in MR SAR images. To explore more effective feature extractors, a task-specific designed backbone network is developed inspired by the VGG-Nets. Our experiments prove that the proposed network is powerful to extract discriminative representations for effective MR SAR ship classification. To further boost the recognition performance, the triplet similarity constraint is combined with the softmax classification error penalty forming the multitask learning prototype, which can achieve good classification performance by pulling the deep representations coming from the same class closer to each other and pushing those of different classes far apart in the learned embedding space. To improve the generalization performance of triplet CNNs in the DML, the Fisher regularization term is imposed on the deep embeddings to take full advantage of the triplets in a training batch. Hence, the global information of the pairwise distances of the deep embeddings is fully mined and more robust models learned are obtained.

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56
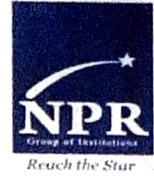
EFFECTIVE PREDICTION OF WINDPOWER BY ANN USING MACHINE LEARNING ALGORITHM

A PROJECT REPORT

Submittedby

AKASH. R	**(920817106004)**
ARUN PANDIAN. R	**(920817106006)**
SATHISH. K	**(920817106057)**

In partial fulfillment for the award of the degree
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NATHAM,DINDIGUL

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BONAFIDE CERTIFICATE

Certified that this project report **"EFFECTIVE PREDICTION OF WINDPOWER BY ANN USING MACHINE LEARNING ALGORITHM"** in the Bonafide work of **"AKASH R(920817106004), ARUNPANDIAN R (92081706004), SATHISH K (920817106057)"** who carried out the project work under my supervision, during the academic year 2020-2021.

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Submitted for the project viva-voice examination held at NPR College of Engineering and Technology in Natham on ___2\8\2\1___

INTERNAL EXAMINER

EXTERNAL EXAMINER

ii

ABSTRACT

Our project is about climate change driving an increasingly stronger influence over governments and municipalities, sustainable development, and renewable energy are gaining traction across the globe. In this sense, a tool that aids predicting the energy output of sustainable sources across the year for a particular location can aid greatly in making sustainable energy investments more. Energy forecasting can be used to mitigate some of the challenges that arise from the uncertainty in the resource. Solar power forecasting is witnessing a growing attention from the research community. The project presents an artificial neural network model to produce solar power forecasts. Sensitivity analysis of several input variables for best selection, and comparison of the model performance with multiple linear regression and persistence models are also shown.

CHAPTER 8

CONCLUSION AND FUTURE WORKS

The artificial neural networks model outperforms the multiple linear regression analysis MLR model and the persistence model. The performance of the ANN depends on how well it is trained and on the quality of the data that is used. The feed-forward ANN with 14 weather variables and with hourly step size for forecasts performed better than the recursive neural networks. The normalized input data doesn't improve the performance, but removing the night hours slightly improves the model performance. Plotting the data, investigating the correlation and sensitivity analysis between the variables, as well as data cleansing of outliers are essential data preparation steps before building the forecasting model. In the clear sky hours, the model produces more accurate forecasts than cloudy hours. The more accurate weather forecasts we use, the more accurate solar power forecasts will be produced. Using the classification variables and the interactions between the variables enhances the performance of the MLR model significantly but this is not the case for the ANN model. With additional historical data, the model performance will improve

```
Please give the Temperature value:

10

The expected Power from the solar panel for the corresponding temperature is : 0.0
```

36

AUTOMATIC MULTIMODE FLOOR DISINFECTING ROBOT FOR COVID-19 PREVENTION

A PROJECT REPORT

Submitted by

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APRIL 2021

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Certified that this project report **"AUTOMATIC MULTIMODE FLOOR DISINFECTING ROBOT FOR COVID-19 PREVENTION"** in the Bonafide work of **"DEEPALAKSHMI.N (920817106015), KANMANI.M (92081706031), MOHANAPRIYA (920817106040)"** who carried out the project work under my supervision, during the academic year 2020-2021.
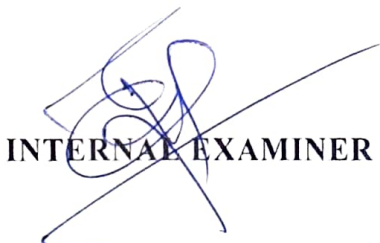
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INTERNAL EXAMINER

EXTERNAL EXAMINER

ABSTRACT

The corona virus disease 2019 (COVID-19) has become a global pandemic since the beginning of 2020.The disease has been regarded as a Public Health Emergency of International Concern (PHEIC) by the World Health Organization(WHO) and the end of January 2020. Up to April 10, 2020, there have been more than 1.5 million cases of COVID- 19 reported globally, with more than 92 thousands deaths .In this project, the disinfection spraying robots are developed to sterilize areas, equipment, and vehicles located in the open space areas. Disinfection is carried out by spraying hot fog during the automatic movement of robot along a preprogrammed route. Further , non-contact temperature monitoring added to maintain social distancing. Robots are perfectly suited for regular sterilization procedures in wide-open areas of industrial and transportation companies. Carrying out these works by robots is especially relevant in the context of the coronavirus pandemic.

CHAPTER 7

CONCLUSION AND FUTURE WORK

As the Hospitals are the most infectious space and crowded with patients of different conditions it is necessary to disinfect the hospital premises in order to reduce the spread of COVID-19. Utilizing manpower for this purpose is also not an option since cleaning process may lead the human being infected with disease himself and other persons with contact. This project is to build up an self running robot that disinfect hospital floors and check body temperature automatically. And even avoid direct contact with a human being while it is working. The robotic assistant developed has potential applications ranging from chemical industries to comfortable scenario inside homes.

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BIPED ROBOT FOR BOMB DETECTION

A PROJECT REPORT

Submitted by

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P.PALANI KUMAR   (920817106045)

C.SARAVANA KUMAR   (920817106055)

In partial fulfillment for the award of the degree

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ANNA UNIVERSITY :: CHENNAI 600 025,

APRIL2021

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BONAFIDE CERTIFICATE

Certified that this project **"BIPED ROBOT FOR BOMBDETECTION"** is the bonafide work of **K.MAHESH BOOPATHY(920817106036), P.PALANI KUMAR (92081706045), C.SARAVANA KUMAR (92081706055)** who carried out the project work under my supervision

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INTERNALEXAMINER

EXTERNALEXAMINER

2

ABSTRACT

This work is mainly focused to develop a terrain War field robot which is capable of detecting bombs land mines in its path and which is wirelessly controlled throughRFmodule.In some circumstances of robot, it is mandatory to carry a heavy load, reach remote places where human access is not viable.In such cases a device can be designed with the help of electro-mechanical system which will prevail over above problem.This paper probes a six-degree of freedom bipedal robot driving by servos and introduces the walking principle, structure composition and control system of the biped robot.

Arduino is used to control the entire course of the movement. Based on the motion analysis of the biped walking robot, programming with the servo function, which is the Arduino software platform own specialized library functions to control the servo motor, control the rotation angle of the servos precisely.

Ultimately this robot is used to detect the bomb in the war field with the walking move using the metal detector sensor that may complete the gait of the robot successfully.

CHAPTER-6

RESULT AND DISCUSSION

Fig 6.1 depicts the designed wireless bomb disposal robot. User sets the input to the system. User control application process the input. It is then transmitted through a Radio Frequency (RF) link which is picked by robot for processing. The processed signal is sent to the appropriate module. Hence the robotic arm module or motor can becontrolled.
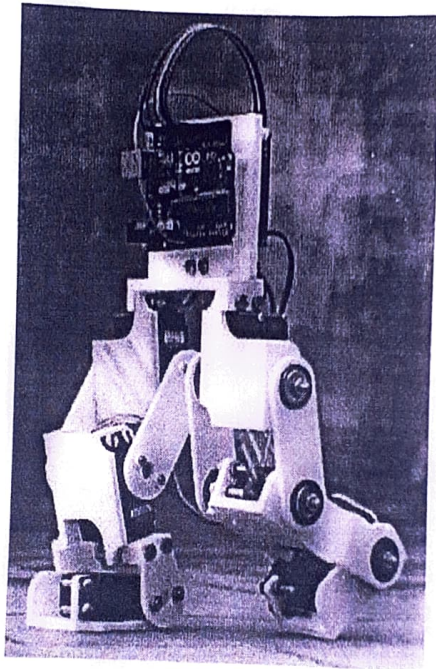

Figure 6.1 robot model

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QCA DESIGN OF CODE CONVERTERS FOR NANO COMMUNICATION

A PROJECT REPORT

Submitted by

BHUVANESHWARI.V	**(920817106010)**
MOHANA PRIYA.S	**(920817106041)**
POOJA.G.S	**(920817106047)**

in partial fulfillment for the award of the degree

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APRIL 2021

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ANNA UNIVERSITY : CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report **"QCA DESIGN OF CODE CONVERTERS FOR NANO COMMUNICATION"** is the Bonafede work of **BHUVANESHWARI.V (920817106010), MOHANA PRIYA.S (920817106041), POOJA.G.S (920817106047)** who carried out the project work under my supervision, during the academic year 2020-2021.

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Dr.A.GOPI SAMINATHAN M.E., Ph.D.,
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SIGNATURE

Mr.J.G.SABARISH M.E.,
SUPERVISOR
Assistant Professor,
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NPR College of Engineering
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Dindigul – 624 401.

Submitted for the project viva-voce examination held at NPR College of Engineering and Technology in Natham on ___ 2\Q ___.

INTERNAL EXAMINER

EXTERNAL EXAMINER

ii

ABSTRACT

Quantum-dot Cellular Automata (QCA) is a nanoscale compute fabric being explored by the VLSI research community as the difficulties in shrinking CMOS transistors mount. This work uses QCA devices and uses those devices to build a simple field programmable gate array (FPGA). The FPGA is a combination of multiple configure logical blocks (CLBs) tiled together. In this work, a novel XOR/XNOR-function logic gate with two inputs, two enable inputs and one output is proposed and designed in Quantum-dot Cellular Automata (QCA) nanotechnology. Present a design rules for specialized architecture design using programmable devices and introduce a simulation engine tuned to efficiently simulate QCA circuits designed for this architecture

CHAPTER-7
CONCLUSION AND FUTURE WORK

In this work, we have introduced a novel XOR/NOR logic gate. The study has a direct application in designing some usefully programmable circuits in QCA domain where efficient is a bijective. First, a novel XOR/XNOR logic gate has been presented and then several complex circuits have been proposed based on the XOR/XNOR logic gate. The performance of the proposed XOR/XNOR logic gate was verified by physical verification and simulation. It was shown that the proposed XOR/XNOR logic gate has the less numbers of cells and less areas. The cost of the proposed XOR/XNOR design is 0.01, which is the lowest overall cost. The proposed XOR/XNOR can be used as a basic logic gate in designing of QCA based large and complex circuits (1-bit full adder, 4-bit adder) so it is very flexible to be used for complex circuit design.

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

Date: 31.08.2020

To

The Principal,

NPR College of Engineering & Technology,

Natham-624401

Dear Sir,

Sub: Permission for In-Plant Training-reg

Ref: NPRCET/OFF/ECE/INT/2020-2021dated :24.08.2020

With respect to reference cited above, we permit Maniekantan T S ,MohanaPriya S , Mohan Kumar M K , Saravanakumar C ,Sathish K ,Shema S of Final year Electronics and Communication Engineering to undergo In-Plant Training in our organization from 07.09.2020 – 14.09.2020.

Thank you.

Dr. J.SUNDARARAJAN

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

Principal

N.P.R. College of Engineering & Technology

Natham, Dindigul (Dt) - 624 401.

BRIGHT
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Mail : thebrighttechnology@gmail.com

Date:14.09.2020

To whomsoever it may concern

This is to certify that **Mr.Maniekantan T S**, Final year ECE of NPR College of Engineering & Technology, Natham has undergone In-Plant training in our organization from 07.09.2020 – 14.09.2020.

We appreciate his participation with interest towards the training program.

Dr. J.SUNDARARAJAN,
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This is to certify that **Ms.MohanaPriya S**, Final year ECE of NPR College of Engineering & Technology, Natham has undergone In-Plant training in our organization from 07.09.2020 – 14.09.2020.

We appreciate her participation with interest towards the training program.

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Date:14.09.2020

To whomsoever it may concern

This is to certify that **Mr.Mohan Kumar M K**, Final year ECE of NPR College of Engineering & Technology, Natham has undergone In-Plant training in our organization from 07.09.2020 – 14.09.2020.

We appreciate his participation with interest towards the training program.

Dr. J.SUNDARARAJAN,
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Date:14.09.2020

To whomsoever it may concern

This is to certify that **Mr.Saravanakumar C**, Final year ECE of NPR College of Engineering & Technology, Natham has undergone In-Plant training in our organization from 07.09.2020 – 14.09.2020.

We appreciate his participation with interest towards the training program.

Dr. J.SUNDARARAJAN,
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Date:14.09.2020

<u>To whomsoever it may concern</u>

This is to certify that **Mr.Sathish K**, Final year ECE of NPR College of Engineering & Technology, Natham has undergone In-Plant training in our organization from 07.09.2020 – 14.09.2020.

We appreciate his participation with interest towards the training program.

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Date:14.09.2020

To whomsoever it may concern

This is to certify that **Ms.Shema S**, Final year ECE of NPR College of Engineering & Technology, Natham has undergone In-Plant training in our organization from 07.09.2020 – 14.09.2020.

We appreciate her participation with interest towards the training program.

Dr. J.SUNDARARAJAN,
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Sri Varadharaja Bavanam,Canara Bank Upstairs,
Nagal Nagar, R.S. Road, Dindigul - 624003

Vi Microsystems Pvt. Ltd.,

Date: 26.08.2020

To

The Principal

NPR College of Engineering & Technology

Natham

Sir,

Sub: permission for In Plant Training - Reg.

Ref: NPRCET/OFF/ECE/IPT-02/2020-2021 dated **16.08.2020**

With reference to the above, we are pleased to offer in plant training to the students listed below, studying B.E-Electronics and Communication Engineering at NPR College of Engineering & Technology,Natham from 03.09.2020 -10.09.2020 in our organization.

S.No.	Name of the Student	Reg.No	Year & Branch
1.	Ms.Durgadevi S	920818106008	III ECE
2.	Ms.Kiruthika R	920818106013	III ECE
3.	Mr.Muthu Vignesh M	920818106017	III ECE
4.	Mr.Rajkumar K	920818106024	III ECE
5.	Ms.Seema Fathima S	920818106029	III ECE
6.	Ms.Varshini B	920818106036	III ECE

With Regards

For VI Microsystems

Dr. I.SUNDARARAJAN,
B.E., M.Tech., Ph.D.,
Principal
N.P.R. College of Engineering & Technology
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Vi Microsystems Pvt. Ltd.,

Date: 10.09.2020

TO WHOM IT MAY CONCERN

This is to certify that **Ms.Durgadevi S (920818106008)** studying in Third year Electronics and Communication Engineering of NPR College of Engineering & Technology,Natham has undergoneIn-Plant training in our organization for 7 days from 03.09.2020 – 10.09.2020.

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

With Regards

For VI Microsystems

Dr. J.SUNDARARAJAN,
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Date: 10.09.2020

TO WHOM IT MAY CONCERN

This is to certify that **Ms.Kiruthika R (920818106013)** studying in Third year Electronics and Communication Engineering of NPR College of Engineering & Technology,Natham has undergoneIn-Plant training in our organization for 7 days from 03.09.2020 – 10.09.2020..

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

With Regards

For VI Microsystems

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GSTIN : 33AAACV0909J1ZJ   PAN No.: AAACV0909J

Date: 10.09.2020

TO WHOM IT MAY CONCERN

This is to certify that **Mr.Muthu Vignesh M (920818106017)** studying in Third year Electronics and Communication Engineering of NPR College of Engineering & Technology,Natham has undergoneIn-Plant training in our organization for 7 days from 03.09.2020 – 10.09.2020.

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With Regards

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Date: 10.09.2020

TO WHOM IT MAY CONCERN

This is to certify that **Mr.Rajkumar K (920818106024)** studying in Third year Electronics and Communication Engineering of NPR College of Engineering & Technology,Natham has undergoneIn-Plant training in our organization for 7 days from 03.09.2020 – 10.09.2020..

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

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Date: 10.09.2020

TO WHOM IT MAY CONCERN

This is to certify that **Ms.Seema Fathima S (920818106029)** studying in Third year Electronics and Communication Engineering of NPR College of Engineering & Technology,Natham has undergoneIn-Plant training in our organization for 7 days from 03.09.2020 – 10.09.2020.

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

With Regards

For VI Microsystems

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

MFRS MICROPROCESSOR TRAINERS, PROCESS CONTROL TRAINERS, POWER ELECTRONICS TRAINERS, DSP TRAINERS, PERSONAL COMPUTER TRAINERS

Date: 10.09.2020

TO WHOM IT MAY CONCERN

This is to certify that **Ms.Varshini B (920818106036)** studying in Third year Electronics and Communication Engineering of NPR College of Engineering & Technology,Natham has undergoneIn-Plant training in our organization for 7 days from 03.09.2020 – 10.09.2020.

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

With Regards

For VI Microsystems

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

MFRS MICROPROCESSOR TRAINERS, PROCESS CONTROL TRAINERS, POWER ELECTRONICS TRAINERS, DSP TRAINERS, PERSONAL COMPUTER TRAINERS

megatronics ───

To

The Principal,

NPR College of Engineering & Technology,

Natham.

Dear Sir,

Sub: Permission for Inplant Training-reg

Ref: NPRCET/OFF/ECE/IPT/2020 - 2021 dated:01.09.2020

With reference to your letter cited above, we are pleased to give permission for AFRIN SHIFANA A , BALAJI M, CHRISTIYA I, DEVISRI S, PORKODI S of Second year Electronics and Communication Engineering of your institution to undergo In-Plant Training in our organization from 15.09.2020 - 22.09.2020

Thank you.

For **Megatronics**

(C.Kannan)

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

─────────── **Megatronics** ───────────

Date: 22.09.2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. AFRIN SHIFANA S (920819106002)** 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 15.09.2020 - 22.09.2020.

We wish her every success in life.

For **Megatronics**

(C.Kabhan)

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

Megatronics

65, R.K. Mills 'B' Colony, Peelamedu Pudur, Coimbatore - 641 004.
Cell : 98422-85001   Phone : 0422 - 256 5001   E-mail : megatronicsindia@gmail.com
Web : www.megatronicsindia.in

Date: 22.09.2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. BALAJI M (920819106008)** 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 15.09.2020 - 22.09.2020.

We wish him every success in life.

For **Megatronics**

(C. Kannan)

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

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Cell : 98422-85001   Phone : 0422 - 256 5001   E-mail : megatronicsindia@gmail.com
Web : www.megatronicsindia.in

Date: 22.09.2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms.CHRISTIYA I (920819106011)** 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 15.09.2020 - 22.09.2020.

We wish her every success in life.

For **Megatronics,**

(C.Kannan)

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

Megatronics

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Web : www.megatronicsindia.in

megatronics

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. DEVISRI S (920819106012)** 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 15.09.2020 - 22.09.2020.

We wish her every success in life.

For **Megatronics**

(C.Kabhan)

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

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Cell : 98422-85001 Phone : 0422 - 256 5001 E-mail : megatronicsindia@gmail.com
Web : www.megatronicsindia.in

Date: 22.09.2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. PORKODI S (920819106043)** 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 15.09.2020 - 22.09.2020.

We wish her every success in life.

For **Megatronics**

(C.Kabilan)

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

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65, R.K. Mills "B" Colony, Peelamedu Pudur, Coimbatore - 641 004.
Cell : 98422-85001   Phone : 0422 - 256 5001   E-mail : megatronicsindia@gmail.com
Web : www.megatronicsindia.in

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
Date: 02.10.2020
GSTIN : 33AAACV0909J1ZJ   PAN No. : AAACV0909J

To

The Principal,

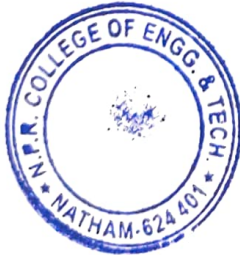NPR College of Engineering & Technology,

Natham.

Sir,

Sub: Permission for Internship - Reg.

Ref: NPRCET/OFF/ECE/INT/2020-2021 dated: 28.09.2020

      With reference to the above, we are pleased to offer internship to the students listed below, studying B.E- Electronics and Communication Engineering at NPR College of Engineering & Technology, Natham from 12.10.2020 – 27.10.2020 in our organization.

S.No.	Name of the student	Register Number	Year& Branch
1.	S.Dhath Vetha	920819106014	II ECE
2.	B.Jyothika	920819106021	II ECE
3.	J.S.Karuniaa	920819106023	II ECE
4.	M.Keerthi	920819106024	II ECE
5.	V.Muthu Ranjani	920819106037	II ECE

With Regards

For VI Microsystems

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

MFRS MICROPROCESSOR TRAINERS, PROCESS CONTROL TRAINERS, POWER ELECTRONICS TRAINERS, DSP TRAINERS, PERSONAL COMPUTER TRAINERS

Vi Microsystems Pvt. Ltd.,

Date : 27.10.2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms.S.DhathVetha** (920819106014), studying in Second year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone internship in our organization from 12.10.2020 – 27.10.2020

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

With Regards

For VI Microsystems

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

Vi Microsystems Pvt. Ltd.,

Date : 27.10.2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms.B.Jyothika** (920819106021), studying in Second year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone internship in our organization from 12.10.2020 – 27.10.2020

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

With Regards

For VI Microsystems

Dr. J.SUNDARARAJAN,
B.E., M.Tech., Ph.D.,
Principal
N.P.R. College of Engineering & Technology
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 : 27.10.2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms.J.S.Karuniaa** (920819106023), studying in Second year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone internship in our organization from 12.10.2020 – 27.10.2020

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

With Regards

For VI Microsystems

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

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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 : 27.10.2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms.M.Keerthi** (920819106024) studying in Second year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone internship in our organization from 12.10.2020 – 27.10.2020

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

With Regards

For VI Microsystems

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

MFRS MICROPROCESSOR TRAINERS, PROCESS CONTROL TRAINERS, POWER ELECTRONICS TRAINERS, DSP TRAINERS, PERSONAL COMPUTER TRAINERS

Vi Microsystems Pvt. Ltd.,

Date : 27.10.2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms.V.Muthu Ranjani** (920819106037) studying in Second year Electronics and Communication Engineering of NPR College of Engineering & Technology, Natham has undergone internship in our organization from 12.10.2020 – 27.10.2020

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

With Regards

For VI Microsystems

Dr. J.SUNDARARAJAN,
B.EI, M.Tech., Ph.D.,
Principal
N.P.R. College of Engineering & Tschnology
Natham, Dindigul (Dt) - 624 401.

Elysium

Date: 29.09.2020

To

The Principal,

NPR College of Engineering & Technology,

Natham.

Sir,

Sub: Permission for internship-reg

Ref: NPRCET/OFF/ECE/INT-2/2020-2021 dated :

With reference to your letter we are pleased to grant permission for **Mr.D.Prasanna (920819106046), Ms.N.Singarabrindha (920819106059), Ms.K.Vishali (920819106069), Mr.B.Mohanbabu (920819106034)** and **Mr.M.Muthu Moorthy (920819106036)** of Second year Electronics and Communication Engineering of your institution to undergo internship in our concern from 08.10.2020 – 23.10.2020

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

With Regards

(For Elysium technologies)

Date: 23.10.2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr.D.Prasanna (920819106046), Ms.N.Singarabrindha (920819106059), Ms.K.Vishali (920819106069), Mr.B.Mohanbabu (920819106034) and Mr.M.Muthu Moorthy (920819106036)** of Second year ECE of NPR College of Engineering& Technology, Natham have successfully done the internship in our concern from 08.10.2020 – 23.10.2020.

During this period they were sincere and hardworking.

With Regards

(For Elysium technologies)

Dr. J.SUNDARARAJAN.

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

Principal

N.P.R. College of Engineering & Technology

Natham, Dindigul (Dt) - 624 401.

megatronics
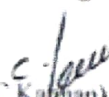
Date : 05.10.2020

INTERNSHIP CONFIRMATION LETTER

This is with the reference to your permission letter requesting internship for **Ms.V.Dharshini (920818106005)**, **Ms.Kiruthika.R (920818106013)**, **Ms.Nivetha K.S (920818106019)**, **Ms.Sarmathi.R (920818106027)**, **Ms.Swetha.M (920818106035)** studying Third year in the department of Electronics and Communication Engineering in NPR college of Engineering and Technology, Natham. We are pleased to accord permission for the above mentioned students to undergo internship in our organization starting from 15.10.2020 - 29.10.2020

For **Megatronics,**

(C.Kannan)

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

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Cell : 98422-85001   Phone : 0422 - 256 5001   E-mail : megatronicsindia@gmail.com
Web : www.megatronicsindia.in

megatronics ————————————————————————————————

Date : 29.10.2020

TO WHOM SO EVER IT MAY

This is to certify that **Ms. Dharshini.V (920818106005)** doing B.E,Electronics and Communication Engineering in NPR college of engineering and technology,Natham has participated in the intership program offered by our organization during the period of 15.10.2020 - 29.10.2020.

We wish her every success in life.

For **Megatronics,**

(C.Kannan)

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

Date : 29.10.2020

TO WHOM SO EVER IT MAY

This is to certify that **Ms. Kiruthika.R (920818106013)** doing B.E,Electronics and Communication Engineering in NPR college of engineering and technology, Natham has participated in the internship program offered by our organization during the period of 15.10.2020 - 29.10.2020.

We wish her every success in life.

For **Megatronics**

(C.Kannan)

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

Megatronics
65, R.K. Mills "B" Colony, Peelamedu Pudur, Coimbatore - 641 004.
Cell : 98422-85001   Phone : 0422 - 256 5001   E-mail : megatronicsindia@gmail.com
Web : www.megatronicsindia.in

megatronics

Date : 29.10.2020

TO WHOM SO EVER IT MAY

This is to certify that **Ms. Nivetha.K.S (920818106019)** doing B.E,Electronics and Communication Engineering in NPR college of engineering and technology,Natham has participated in the internship program offered by our organization during the period of 15.10.2020 - 29.10.2020.

We wish her every success in life.

For **Megatronics**

(C.Kannan)

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

─── **Megatronics** ───

65, R.K. Mills "B" Colony, Peelamedu Pudur, Coimbatore - 641 004.
Cell : 98422-85001   Phone : 0422 - 256 5001   E-mail : megatronicsindia@gmail.com
Web : www.megatronicsindia.in

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TO WHOM SO EVER IT MAY

This is to certify that **Ms. Sarmathi.R (920818106027)** doing B.E,Electronics and Communication Engineering in NPR college of engineering and technology,Natham has participated in the internship program offered by our organization during the period of 15.10.2020 - 29.10.2020.

We wish her every success in life.

For Megatronics

(C.Kannan)

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

———— Megatronics ————
65, R.K. Mills "B" Colony, Peelamedu Pudur, Coimbatore - 641 004.
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Web : www.megatronicsindia.in

megatronics

TO WHOM SO EVER IT MAY

This is to certify that **Ms. Swetha.M (920818106035)** doing B.E,Electronics and Communication Engineering in NPR college of engineering and technology,Natham has participated in the internship program offered by our organization during the period of 15.10.2020 - 29.10.2020.

We wish her every success in life.

For **Megatronics**

(C.Kannan)

Dr. J.SUNDARARAJAN,
B.E.
Principal
N.P.R. College of Engineering & Techn
Natham, Dindigul (Dt) - 624 401.