Meghna Roy Chowdhury

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EDUCATION

GRADE X (ICSE)

May 2014 | Bangalore, India
Grade: 96%
(School Topper)

GRADE XII (CBSE)

May 2016 | Mumbai, India
Grade: 92%

BACHELORS OF TECHNOLOGY

ELECTRONICS AND COMMUNICATION ENGINEERING
2016 to 2020
Vellore Institute of Technology (ABET Accredited)
GPA: 9.24/10
(Top 4% in Batch of 2020)

SKILLS

SOFTWARE AND TOOLS

Java, C, C++, Python , Keil - Assembly Language Programming (8051) and Embedded C, MATLAB, Verilog, Vivado, Photoshop.

HARDWARE

Basic electronics, 8051 Microcontroller, Arduino, NodeMCU, FPGA(Xilinx)

ACHIEVEMENTS AND INITIATIVES

- Teaching Assistant at VIT- Digital Logic and Design
- 3rd place in MakeAThon (conducted by Prag Robotics)
- Member of Core Central Committee and Head of Photography – TechnoVit'18 (A technical Fest)
- Best graduating student and School Topper (Grade 10)
- Elected as IT Captain in school (2013-14)
- Consistent Worker (Founder's Day Award)
- Green Champion Award (Conserve My Campus by Schneider Electric)
- Conducted Road Safety Drive (Chennai)
- An active member of Community Services (Feeding the underprivileged, ViTeach, etc)

WORK EXPERIENCE

TATA CONSULTANCY SERVICES LTD, MUMBAI

RESEARCH AND INNOVATION – ANALYTICS & INSIGHTS
August 2020 – Present

1. **Analytics in a Box-** An automated prediction system for classification and regression problems on structured data using GAN, Auto ML, and Adaptive ML (September-November)
2. **CogniExtract** - ML-based solution for extracting information from Unstructured data to automate the manual process (November – Present)

RESEARCH WORK

YUAN ZE UNIVERSITY, TAIWAN

DEEP LEARNING VIA ECG AND PPG SIGNALS TO PREDICT DEPTH OF ANAESTHESIA (May 2020 – July 2020)

Worked under the guidance of Prof Jiann-Shin Shieh to predict the depth of anesthesia via continuous signal data of ECG and PPG acquired during surgery. The 1D signals were pre-processed in MATLAB and 2D heatmaps of the signals were generated; which in turn were fed as inputs to various deep learning models. The best accuracy was 82% which was achieved with a 10-convolution layered model using inputs as ECG & PPG subplots.

INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR

GENERATION OF TRNG FOR HARDWARE SECURITY (May 2019– June 2019)

Worked under the guidance of Prof. Rajat Subhra Chakraborty in the domain of Hardware Security to design and implement a True Random Number Generator on Xilinx FPGA (Artix 7 Nexys-4 DDR) using Variable-precision phase encoding and Repetitive sampling. The randomness was tested and verified using NIST Test suites. The software used was Vivado and the language used was Verilog.

INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY

REAL-TIME WEIGH SCALE (May 2018 – July 2018)

Worked under the guidance of Prof Virendra Singh as a part of a project to create an IOT based robust weigh scale. A relation between weights and their corresponding voltages were determined. Using this relation, a robust system was generated to determine weights based on the voltage value. The accuracy was 89%. This was deployed in the cloud using ThingSpeak. The microcontroller used was and IIT Bombay produced microcontroller - AT89C5131A. The software used was Keil (Assembly Language Programming)

COURSE WORK

CAPSTONE PROJECT

TRANSPORTATION AND LOGISTICS OPTIMIZATION USING IOT AND MACHINE LEARNING

(IN COLLABORATION WITH TATA CONSULTANCY SERVICES LTD.)

January 2020 – April 2020

Worked with Mr. Meghraj Nalge (Analytics and Insights Dept.) to predict the lifetime of Li-ion batteries used in Electric Vehicles. Various machine learning models were used to predict the lifetime of an EV battery based on different information collected. The accuracy achieved in predicting lifetime was 95%. The model also suggests its user as to how long the vehicle can travel with the existing battery life on different terrains and also the charging time required for a particular travel destination. The language used was Python.

PRE- FINAL YEAR PROJECT

GESTURE VOCALISER FOR THE DEAF AND MUTE

This project aimed to deploy an inexpensive technology to ease the communication between the disabled (deaf and mute). It is a gloved technology that converts the hand action of the wearer into text. A circuit consisting of various sensors were integrated with an Arduino Board. Bluetooth was used to display the corresponding text on an LCD and mobile phone. The model was tested in Ajay Higher Secondary School for The Deaf, Chennai, India.

OTHER COURSE PROJECTS

INFANT MONITORING SYSTEM

Using 8051 microcontroller, temperature sensor, and PIR sensor, this circuit indicates whether an infant's temperature is high/low and whether the infant is present in the cot and hence alerts the nurse/doctor during an emergency.

IOT BASED FACULTY AVAILABILITY SYSTEM

Using NODEMCU and Blynk application, this system enables students to know the availability of faculties in their respective cabin through an app.

BILLING SYSTEM FOR SUPERMARKET

A computerized billing system using data structures (queues and stacks) in C.

AUDIO MANIPULATION

This project consisted of an inexpensive method for manipulating audio file- noise removal, echo addition. Software used- MATLAB.

DOORBELL FOR THE DISABLED

A device using transistors and RFID to aid the disabled(deaf) to get notifies with a visual signal when the doorbell is rung.

AUTOMATIC STREET LIGHT SYSTEM

An automated and energy-efficient street lighting system using LDR and Arduino.

HOTEL MANAGEMENT SYSTEM

Implemented in Java using different classes.

WORKSHOP AND TRAINING

- Deep Learning Course – Coursera July'20
- Data Science Course – Udemy – June'20
- Workshop on IOT conducted by I3Indiya (Radiance, IIT Bombay) – July 2019
- Graphic Design Internship – The Rising Bharat (2018)
- Course on Graphic Design (My Captain |The Climber) - February 2018
- Training on Process Instrumentation from RLT Instrumentation Academy in 2017
- LabVIEW Arduino Workshop -Vellore Institute of technology (Chennai) Mar 2017 - Mar 2017

HOBBIES AND INTERESTS

- Photography
- Graphic Design
- Swimming
- Dance
- Environmental activities
- Social Service