Ashutosh Trivedi

Mobile Number: (+65) 8914 2534 | Email: ashutosh003@e.ntu.edu.sg | Website: www.ashutoshtrivedi.me **EDUCATION**

- Nanyang Technological University (NTU)
- Bachelor of Engineering (Electrical and Electronic Engineering), Accelerated Bachelor Program
- Honors (Distinction)
- Modules: IoT: Tiny ML, Microprocessors, Data Structures and Algorithms, Embedded Systems, Wireless System Design, Introduction to Machine Learning and Data Science, Circuit Analysis, Digital Electronics.
- 1st Position in ClimateHack 2022: IoT-Based Food Quality Monitoring Solution
- 1st Position in BlockChain at NTU Innovation Pitch 2022
- People's Choice Award: HP's Innovation Challenge 2022

Vasant Valley School

• 96.3% - High School Diploma: Physics, Mathematics, Computer Science, Economics, Sanskrit, and English

TECHNICAL SKILLS

- Programming: Python, HTML, CSS, Ruby on Rails, C/C++, C#, JavaScript, SQL, Verilog
- Applications: UNITY, MATLAB, Photoshop, InDesign, Sketch, After Effects, MS Office
- Operating Software: MacOS, Windows, Linux
- Digital Skills: IoT, Machine Learning (TensorFlow, PyTorch), Embedded Systems, FPGA, Git, AWS, Arduino, Raspberry Pi, Data Structures, Movie Editing, Microcontrollers, Computer Networks, SolidWorks, PCB Designing, Analog Electronics

INTERNSHIP & WORK EXPERIENCE

ROBERT BOSCH PVT. LTD

1). Research Intern for IoT and Machine Learning (Final Year Industrial Project)

• Developing and working on a prototype for an IoT sensor for Machine Learning, working specifically with developing **I2C**, **SPI** protocol-based embedded system for sensor value predictions for milliseconds using Raspberry Pi, and further development of boards. Created 3D Models for sensors and developed PCB boards for prototyping.

2). IoT Intern for HVAC Systems and Building Solutions

- Created Machine Learning models, using sensor values to predict user availability and occupancy detection. Using Python, TensorFlow-GPU created CNN, LSTM (encoder/decoders), and other models to make time-series predictions.
- Further implemented as a product to company customers to reduce energy consumption in HVAC systems through occupancy detection. Worked on sensor testbed for temperature, humidity, and energy conservation in building rooms.
- Assembled Wi-Fi BLE mesh network using Raspberry Pi and Bluetooth beacons:
 - Devised own network strategy to efficient data processing and transfer.
 - Eradicated 3rd party dependency and usage to create an independent system to detect occupants with an accuracy of 84% in building spaces.
 - Implemented MQTT protocol for data transfer and created a Python algorithm to accurately detect closest proximity users at the earliest time. Reduced detection time and provided a basis for machine learning predictions and data analysis.

SURBANA JURONG LAB

(Part-Time) Lab Assistant, LNG Underground Project

• Assisted in the LNG project, providing graphical analysis of temperatures, energy, and other variables using MATLAB which was implemented to test for anomalies and presentation of experiment results.

EKANEK NETWORKS LTD

App and Web Development Intern

- Utilized Python Programming to create website scraping scripts to analyze data related to beauty and fashion products
- Successfully designed and developed *Facial Recognition API* to recommend appropriate products to consumers upon detecting and analyzing facial features, it boosted daily sales hit by 40% efficiently and productively.
- Utilized Ruby on Rails to develop an Order Management System that successfully integrated with 3rd party delivery companies; an essential link for an eCommerce platform used for tracking orders.

Aug 2019 – Dec 2022 (Expected)

Singapore

Feb 2021 - May 2021

New Delhi, India May 2019 - Aug 2019

Mar 2005 - May 2019

Singapore Jan 2022 - Present

May 2021 – Dec 2021

INDUSTRY PROJECTS NutrIoTion | Founder

• Created an IoT-based sensor solution that aims at effectively determining the spoilage level of fresh produce using gas sensors along with a real-time dashboard for supermarkets. We received funding from SAP and CodeForAsia in ClimateHack 2022 | Visit at: https://www.nutriotion.org

AIRBUS

Project Consultant for Sustainability and Digital Solutions (NTU Peak)

• Devising a one-id solution with features to connect passengers and airports with an IoT System to reduce flight delays. Creating a personalized experience to boost passenger comfort along with reducing environmental impact.

DYSON

Group Leader for Product Development (Real-time IoT Device)

- Created a medical device for patients undergoing physiotherapy. Developed an intermittent-pneumatic compression device to imitate massaging and physiotherapy for patients unable to meet physiotherapists due to Covid-19.
- Led the group and prototyped a self-made device, understood AGILE & Scrum process. Worked under a mentor to gain entrepreneurial experience and get a hands-on introduction to pitching and starting your own project.

UNILEVER PVT. LTD

Project Consultant, Data Analytics for Customer Satisfaction (NTU EDGE)

- Led a team of 5 to gather customer satisfaction data from 20+ global customers that entail 1500+ clients.
- Explored and analyzed the data obtained using **Python**, **Excel**, and **R** programming to prepare a report with actionable insights across 12 touchpoints including customer support, order management, and supply fulfilment among others.
- Identified top 5 factors influencing the Net Promoter Score (NPS) using machine learning; Provided datadriven recommendations for improvements based on these factors

NTU-EEE Garage Project

Smart & Affordable Automated Home Lighting IoT Project

• Building a *Modular Smart Light* upon assembly with other units; innovator project supported by NTU funding.

RESEARCH

NTU (Design and Innovation Project) Wireless Charging System for Intramedullary Nail

Research and development for creating a wireless charging system for motors for limb lengthening using metal rods forced into the medullary cavity of a bone. Creating a real-time feedback system for the nail increasing procedure to be controlled using Bluetooth, resolving the problem of opening the leg and doing surgery to move the nail every time.

NTU URECA (Undergraduate Research Experience on Campus) Research Paper

IoT Mesh Network with Artificial Intelligence and Machine Learning for monitoring and control Assumed role as Research Assistant to develop Core Neural Network to analyze, classify and adjust room temperature and humidity levels appropriately (based on ASHRAE Guideline); aim to achieve a conducive working environment.

Experimented with multiple variables (temperature, humidity, etc.) to achieve thermal comfort. Data Science tools: Random Forest, Logistic Regression, SVM and PyThermal Comfort (tool) for predictions.

LEADERSHIP AND CO-CURRICULAR ACTIVITIES

HACKOSS Chair, NTU Open-Source Society

• Launched programming projects for students with real-world applications like Machine Learning, web development, etc.

Startup Development Ambassador, NTU Garage@EEE

- Liaising, developing opportunities for students with external companies and competitions to pitch and innovate new ideas
- Organized IdeasJam flagship event for students to come up with their own devices to convert into the real world.

Teaching Volunteer, Teach India Initiative (Times of India)

• Volunteered to teach young adults English, computer knowledge, and other employability skills to help them gain jobs at the annual career fair. Successfully helped over 40 people achieve job success in shopping places, theatres, etc.

Interests

Hockey, Football, Tennis | Violin (Grade 4 Trinity School) | Film Editing and Designing

Feb 2021 - May 2021

Oct 2020 - Aug 2021

Jan 2022 – May 2022

Singapore Feb 2022 - Mar 2022

Singapore Aug 2021 – Dec 2021

Singapore

Singapore

Dec 2020 - May 2021

May 2015 – June 2019

Aug 2021 – May 2022

Aug 2019 - Present

Singapore