

Aishik Nagar

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Education

Nanyang Technological University

2018 – 2022

Bachelor of Engineering (Electrical and Electronics Engineering)

Singapore

- Nanyang Science and Engineering Scholar (100% Scholarship for Undergraduate Studies)
- Specialization in AI and Computer Engineering
- **University Scholars Gold Medal (Koh Boon Hwee Scholars Award)** awarded to **8 out of 10000+** students in the engineering cohort to recognise the accomplishments of exceptionally talented graduating students who display academic excellence, strong leadership ability and great potential to contribute to the society.
- **NTU EEE Excellence Award** awarded to **4 out of 750+** students in the class of 2022 for excellence in academic performance and outstanding achievements in extra-curricular activities.

The Heritage School

2016 – 2018

High School

Kolkata, India

- **All India Rank 4** in Indian High board school examinations (ISC): 98.75% (School topper)
- INSPIRE Scholarship by the Central Govt. Of India for being the top 1% performer in National Examinations
- Outstanding Student Personality Award upon Graduation

Experience

ASUS AICS

Dec 2022 – Present

Senior Software Development Engineer (Machine Learning and Full-Stack)

Singapore

- Worked on the AI and Full Stack Engineering Systems team to build AI-first Hospital Information Systems (xHIS) in Taiwan and Singapore, serving serving **20+ hospitals** and helping **thousands of patients in consultation**.
- Building **Patient Summary models** using **Agentic LLMs, GNNs and Knowledge Graphs** incorporating Historical Patient EHR data and Patient Vitals with focus on **reducing hallucinations** and **increased factuality**.
- Built **Developer Copilot Systems** for Internal and Third Party developers, using **Agentic LLMs** with internal codebase access and autonomous planning capabilities. **Outperformed State-of-the-Art (SOTA) Implementations for our task by over 15%**, with **25% effective productivity gain** and 11% code accuracy gain.
- Engineered AI SaaS V2 services: **45% latency and 75% memory usage reduction** for medical (ICD, CPOE, Drug etc.) search and prediction.
- Designed Evaluation Systems achieving **87% faster defect RCA** and improved **Search Rank Algorithms** leading to **95%+ user satisfaction**.
- Developed services for xHIS including **Hospital IT Debugging Support Bot, ICD Code Prediction**, remote doctor PC debugging, health check mechanisms and various hospital requested features across AI, Backend, Frontend and Telemetry teams.

Shopee

Jul 2022 – Dec 2022

Algorithm Engineer

Singapore

- **Led IC Anti Spoofing Projects for Malaysia**; developed Identity Verification API for ShopeePay and SeaMoney.
- Enhanced data mining efficiency in unlabeled datasets from **10% to 40%**.
- Implemented CNN techniques for handling long-tailed imbalanced datasets using architecture agnostic techniques like RSG and LDAM-DRW, **boosting model performance by 70%** on internal benchmarks.
- Applied CNN Condensing with PDE constraints, **reducing storage and computation costs by 60%**.

A*STAR

Aug 2021 – Mar 2022

Research Intern

Singapore

- Researched developing **3D models from point clouds and image data** in the I2R Visual Intelligence Department for indoor construction mapping project.

Shopee

Jan 2021 – Aug 2021

Data Science Intern

Singapore

- Improved **yolov5** and **U2Net** models for product detector and segmentation services; deployed on Shopee's platform.
- Engineered inference and deployment optimizations pipelines, **increasing efficiency by 10x**; **servicing 100M+ daily requests**.

Panasonic R&D Center

Jun 2020 – Dec 2020

Image Processing and AI Intern

Singapore

- Developed Perception AI for autonomous vehicles; which were shipped to production.
- Integrated **face and 3D+2D object detection** with **sensor data** (LIDAR, pinhole, fisheye, GPS), and developed **visualization systems** for 2D and bird's-eye view analysis of the vehicle.

Research & Publications

Publications

All Research was conducted alongside a full-time role

Singapore

- **ICLR 2024 TinyPaper**, Dissecting Zero-Shot Visual Reasoning Capabilities in Vision and Language Models, **Invite to Present (Notable), First Author**
- **IEEE WCCI (IJCNN) 2024**, Zero-Shot Visual Reasoning by Vision-Language Models: Benchmarking and Analysis, **First Author**
- **ICML 2024 Mechanistic Interpretability Workshop**, Investigating Compositionality in Language Models using Adjective-Noun Composition Relationship Representation, **Under Review, Co-First Author**

Open Research

Conducted in University, used in startups and award winning projects which I co-founded

Singapore

- **NTU URECA Undergraduate Research Program (Invite-Only)**, Error Correcting Neural Networks for Robustness to Adversarial Attacks
- **NTU Final Year Project**, Building a Natural Disaster Risk Management System for Resilient Communities

Service

Notable Academic and Research Service

Singapore

- **Session Chair**, Large Language Models, IEEE WCCI (IJCNN) 2024
- **VP (Technology)**, IEEE NTU Student Chapter

Notable Awards & Achievements

- **University Scholars Gold Medal** (Awarded to 8 out of 10,000+ students in NTU Undergraduate Cohort)
- **NTU EEE Excellence Award** (Awarded to 4 out of 750 students in NTU EEE Class of 2022)
- **Nanyang Science and Engineering Scholarship** (Full Undergraduate Scholarship and Stipend)
- **World Champion**, Google Developer Solution Challenge (First Ever Champion from Singapore)
- **Champion**, Microsoft APAC Hackathon (Invited admission into Microsoft Hub for Startup Founders with funding of up to USD 250,000)
- **Best Use of Azure**, Microsoft APAC Hackathon
- **National Gold**, Singapore Techblazer Awards 2021 (Singapore's most prestigious Tech Innovation award)
- National Finalist, Singapore Techblazer Awards 2022
- **Top 3 Winner**, Google Hackfest Singapore (Google's top student developer competition in Singapore)
- **Top 3 Winner**, 15K Technopreneurship Competition Singapore (modelled on MIT's \$100K Entrepreneurship Competition for Singapore)
- Top 10 Finalist, Grab Global Hackathon
- Top 7 Finalist, EnlighteNUS Hackathon (Best Educational Hack)
- AICS Engineering Excellence Award Nominee (Best Code Quality)

Projects

DementiCare

Co-Founder, Dementia Caregiving App

Singapore

- Built a Dementia Caregiving App focusing on assisting Dementia caregivers in looking after patients.

Geolytics.AI

Co-Founder, AI Platform for Natural Disaster Risk Management

Singapore

- Developed and deployed an AI system aimed at enhancing natural disaster risk management strategies.

INTUition v7.0

Aug 2020 – May 2021

Chairperson

Singapore

- Organized Singapore's largest flagship student-run Hackathon, expanding its reach to an international level for the first time.
- Managed various departments including Tech, Logistics, Liaison, Business, and Finance.
- Developed and maintained the official website; Built a **real-time online avatar-based virtual platform** for the event using Go, Angular, Redis, and AWS used by over **500 participants and sponsors** like SAP, HP, BIGO and GovTech.

Technical Skills

Data Science and AI: Python, Tensorflow, Keras, Pytorch, Mathematics for ML, Deep Learning, Statistical Learning, Natural Language Processing, Computer Vision, Numpy, Pandas, SciPy, Data Visualization, Image Processing, LangChain, LangGraph, Agentic LLMs, MLOps, Pytorch Lightning, NVIDIA Triton for AI inference, Huggingface Transformers

Software Engineering: HTML, CSS, Flutter, Firebase, Django, Flask, MongoDB, JavaScript, Go, SQL, PHP, Typescript, React JS, Feathers JS, Vue JS, FastAPI, NoSQL, Redis, Linux, Git, GitHub, Docker, Kubernetes, Helm, Robot Operating System (ROS), Amazon Web Services (AWS), Google Cloud Platform (GCP), Microsoft Azure, Azure DevOps