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 entire 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 Global (AICS)   **Jan 2024 – Present**
***Tech Lead**, Machine Learning Engineer*   *Singapore*

- ASUS Intelligent Cloud Services (AICS) is ASUS Global's **moonshot division** for Biomedical and Healthcare AI Solutions.
- **Leading the team of 5 engineers** for R&D of the **Clinical AI Assistant** system, with features like Clinical Chat, Note Drafting, Clinical Reasoning, Medical Code Recommendation, and Anomaly Detection through **finetuned LLMs and Agentic AI**. Integrated CAA into Taipei Veterans General Hospital with **90%+ positive feedback** in clinical testing.
- Developed new datasets, evaluation and reward functions and training recipes for reinforcement learning based online training of models in hospital settings for clinical reasoning, follow-up and intervention based on partially observable patient signals. Improved **relative performance of small models (7B parameters) by 54%** and **outperformed large models such as GPT o3 on clinical reasoning tasks**.
- Invented a novel summarisation framework, **outperforming State-of-the-Art by 6x in clinical preference**.
- Built **Developer Copilot Systems** for Internal and Third Party developers, using Agentic LLMs to outperform State-of-the-Art Implementations for our task by over 15%, with **25% effective productivity gain** and **11% code accuracy gain.**

ASUS Global (AICS)   **Dec 2022 – Jan, 2024**
Software Development Engineer (Full Stack)   *Singapore*

- Worked in the AI systems team to build AI-first Hospital Information Sytems (xHIS) in Taiwan and Singapore, serving **20+ hospitals** and helping **thousands of patients in consultation**.
- Led projects for Medical AI SaaS services: **45% latency** and **75% memory usage reduction** for **medical search and prediction** (ICD, CPOE, Drug etc.). Improved search ranking algorithms to achieve **95%+ clinician satisfaction**.
- Developed services including Hospital IT Debugging Support Bot, ICD Code Prediction, remote doctor PC debugging, health check mechanisms and dozens of hospital requested features across AI , Backend, Frontend and Telemetry teams.

Shopee   **Jul 2022 – Dec 2022**
Algorithm Engineer   *Singapore*

- Shopee (NYSE: SE) is the largest eCommerce platform in Southeast Asia and Taiwan.
- **Led Anti Spoofing Projects for Malaysia**; developed Identity Verification API for ShopeePay and SeaMoney, **used by millions of customers in Malaysia**.
- Improved 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.

A*STAR   **Aug 2021 – Mar 2022**
Research Intern   *Singapore*

- Worked on a research project to reconstruct 3D models from 2D indoor apartment blueprints. Built 3D simulation environments with virtual data collection using path-finding robots for model training.

Shopee   **Jan 2021 – Aug 2021**
Data Science Intern   *Singapore*

- Improved yolov5 and U2Net models for product detection and segmentation; used in major features such as Image Search.

- Engineered inference and deployment optimizations pipelines, **increasing efficiency by 10x**; **serving 100M+ daily requests.**

Panasonic R&D Center   **Jun 2020 – Dec 2020**
Image Processing and AI Intern   *Singapore*
- Developed Perception AI for autonomous vehicles used in Panasonic ADAS systems.
- Researched face recognition, monocular 3D object detection and sensor fusion algorithms (LIDAR, pinhole, fisheye, GPS, etc.). Developed end-to-end sensor management, data collection and visualization modules for use in the vehicle.

Research & Publications

Publications
All Research was conducted independently alongside my full-time role   *Singapore*
- **ACL Main (Oral), 2025**, uMedSum: A Unified Framework for Advancing Medical Abstractive Summarization, **First Author**
- **ACL Findings 2025**, How do Transformer Embeddings Represent Compositions? A Functional Analysis, **First Author**
- **NAACL Workshop (Oral), 2025**, LLMs are not Zeroshot Reasoners for Biomedical Information Extraction, **First Author**
- **ICLR 2024 TinyPaper, Invite to Present (Notable)**, Dissecting Zero-Shot Visual Reasoning Capabilities in Vision and Language Models, **First Author**
- **IEEE WCCI (IJCNN) 2024**, Zero-Shot Visual Reasoning by Vision-Language Models: Benchmarking and Analysis, **First Author**
- **Under Review, ARR 2025**, Reasoning or Pattern Exploitation? Mechanistic Insights from RL-Trained Language Models, **First Author**

Open Research
Conducted in University, used in startups and award winning projects which I co-founded   *Singapore*
- **NTU Presidents Research Scholar (Invite-Only URECA Program),** 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
- **Reviewer**, ACL, NAACL Workshop

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 winner from Singapore, winner among 10000+ participants)
- **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, winner among 450+ products.)

- 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)
- ASUS Engineering Excellence Award Nominee (Best Code Quality)
- ASUS Business Innovation Award for Clinical AI Assistant

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.