Prannaya Gupta

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Education

2018 – 2023 **NUS High Diploma, NUS High School**.
Majors: *Mathematics, Computer Science (with Honours), Physics (with Honours in Computer Engineering) and Chemistry*
Cumulative Average Point (CAP): **4.8**
(Maximum CAP: 5.0)

2022 – 2023 **Non-Graduating Programme, National University of Singapore** in Computer Science and Computer Engineering.
Modules Taken: `CS2100`, `CS2106`, `CG1111A`, `CG2111A`

Experience

Nov 2023 - Jan 2024 **AI and Data Intern,** Temus
Led a team of interns to develop an LLM-powered HR management system for internal and external use. Assigned work and contributed actively to codebase and deployed application within Temus. Project attained Innovation Award at Google x IMDA Generative AI Trailblazers Competition. Worked on two side projects: a prompt engineering application supporting various service LLMs and a simple Air Traffic Control roleplaying software demo for RSAF's RAiD.

Dec 2022 **AI Intern,** AI Singapore
Worked with a bleeding-edge AI company under AI Singapore to develop a benchmarking tool and a Proof-of-Concept news classification application to pitch their potential models to Singaporean companies. Set up a MLflow interface for easy logging of experimental results.

Projects

2020 – 2023 **Analysing Gait Patterns to Predict Freezing of Gait (FoG) in Parkinson's Disease (PD) Patients using Machine Learning Algorithms**
Designed an Android Application that uses AI algorithms including Support Vector Machines and Convolutional Neural Networks (CNNs) to predict Freezing of Gait (FoG) for post-Parkinson's Disease treatment.
Singapore Science and Engineering Fair (SSEF) 2021 and 2023, **Gold Award**
International Student Science Fair (ISSF) 2023, **1st Place in CS Category**
Global Youth Science and Technology Bowl (GYSTB) 2021, **Third Prize**
Submitted to *IRC Conference on Science, Engineering and Technology (IRC-SET) 2021*, **Best Presenter's Award**

2023 – 2024 **Northstar: Talent Acquisition and Development Software**
Project done at Temus, HR management software. Set up LLM-assisted resume evaluation and summarisation with retrieval-augmented chatbot. Leveraged tool-calling in GPT-4 API to create custom views in chatbot. Contributed to React-based user interface and FastAPI-based server, and led project development in later half. Set up GitHub Projects and Google Cloud Actions.

2022 – 2023 **A Novel Feature Vector for AI-assisted Windows Malware Detection**
Used simple Deep Learning and Deep Transfer Learning to find an optimal model for Dynamic Malware Analysis using the Cuckoo Sandbox and Tensorflow.
Accepted in *IEEE Intl Conf on Dependable, Autonomic & Secure Computing (DASC) 2023*

Projects (continued)

2021 – 2023 **An Automated Screening System for Trinary Star Candidates**
Developed a novel multi-stage algorithm to process astronomical light curves for signs of abnormalities indicative of tertiary influence. Released software as Python library `tris`.

2023 – **ProtoPrompter: Prompt Engineering Application**
Developed as a side project at Temus. Developed a React+FastAPI based application to leverage service LLMs like GPT-4 and Claude. Application to create system prompts and test agentic behaviour of LLMs for production LLM testing. Deployed with Firebase for easy usage within Temus.

2023 **ArXiV.NUSH: A Research Repository for NUSH Students**
A Website to compile your research projects, collaborate on competitions and more. Built with Flask, Vue3 and MySQL.

2022 **Noisy Student Training to identify Textual Elements in Unsupervised News Data via Argumentative Essay Pieces**
Used HuggingFace Transformers to develop a system of models capable of identifying Textual Elements in Opinion Editorials and Argumentative Essays. Create Vue and Flask-based web application test these models.

2021 **FACE: Facial-recognition AI for Communicating Emotions**
Used Tensorflow to develop a CNN model to perform Visual Sentiment Analysis over Facial Expressions. Developed a frotnend with Tkinter to visualise the outputs of the CNN and set up an inference server for the
BuildingBloCS AIWinpetition 2021, **Judges' Choice Award**

Publications

Conference Proceedings

1. L. Q. Yau, Y. T. Lam, A. Lokesh, *et al.*, "A novel feature vector for ai-assisted windows malware detection," in *2023 IEEE Intl Conf on Dependable, Autonomic and Secure Computing, Intl Conf on Pervasive Intelligence and Computing, Intl Conf on Cloud and Big Data Computing, Intl Conf on Cyber Science and Technology Congress (DASC/PiCom/CBDCom/CyberSciTech)*, IEEE, 2023, pp. 0355–0361.

2. A. Nallapuraju, C. R. Ye, P. Gupta, and A. Tay, "Analysing gait patterns of parkinsons' disease patients to predict freezing of gait (fog) using machine learning algorithms," in *IRC-SET 2021: Proceedings of the 7th IRC Conference on Science, Engineering and Technology, August 2021, Singapore*, Springer, 2022, pp. 269–281.

Volunteering

Jul 2023 – **Youth Community Lead**, Better.sg
Leading the Youth Wing of the charity Better.sg, organising tech-for-good community events and liasing with external hackathons for partnerships. Contributing to a Meta-sponsored AI mentorship programme for students in Singapore to work with experienced AI mentors on social good projects.

Dec 2022 – Dec 2023 **Overall-in-Charge**, BuildingBloCS 2023
Organised multiple conferences, aimed at teaching students from various schools computational tasks like Artificial Intelligence, Web Development and Cybersecurity. Led a team of >100 organisers.

Volunteering (continued)

Jan – Jun 2022 — **Core Organiser and Head of Development**, BuildingBloCS 2022
Lead the Development division in charge of distributing an API to participants for their use. Dealt with AWS deployment and server hosting with a Flask backend and SQLite database.

Oct 2021 – Oct 2022 — **Volunteer Developer**, Better.sg
Contributed actively to the Saylah! project as a Frontend Developer (Vue2, Vuetify), the RecycleGoWhere? project as a Backend Developer (Django, Django Rest Framework) and ToBeYou project as a Growth Analyst. Helped with the integration of Firebase in many applications. Held the informal titles of *"Firebase sensei"*, *"Vue sensei"* and *"GitHub sensei"*.

Skills

Coding	Python, JavaScript/TypeScript, Java, Kotlin, SQL, LaTeX, C/C++
AI/ML	TensorFlow, PyTorch, Langchain, Llamaindex
Databases	MySQL, PostgreSQL, MongoDB, Firebase Cloud Firestore, SQLite
Web Dev	HTML, CSS, JavaScript, TypeScript, Vue 2/3, Vuetify, Vite, React, Expo, NextJS, Flask, Django, FastAPI
Misc.	Typesetting, Presentation Design, Leadership
Leadership	Club Director of Astronomy Club (80-member CCA), President of AppVenture (76-member Club), Overall-In-Charge and Head of Development of BuildingBloCS (100-member Community VIA), Head of Youth Community at Better.sg (3000-member Charity)

Awards and Scholarships

Awards and Achievements

2020-2023 — **Edusave Scholarship for Independent Schools**.

2024 — **Innovation Award**, Google x IMDA Generative AI Trailblazers Competition.

2023 — **1st Place (CS Category)**, International Student Science Fair.

Gold Award, Singapore Science and Engineering Fair.

SUTD Research and Innovation Award (Healthcare).

2022 — **Gold Award**, Singapore Physics Olympiad, Selected to National Training Team.

Bronze Award, Singapore Astronomy Olympiad.

2021-2023 — **Gold Award**, Singapore Physics League.

2021 — **Best Presenters' Award**, IRC Conference on Science, Engineering and Technology.

Third Prize, Global Youth Science and Technology Bowl.

2nd in Poster Presentation, International Science Youth Forum.

Gold Award, Singapore Science and Engineering Fair.

Certification

2020 — **Machine Learning by Stanford University**. Awarded by Coursera.

2021 — **Introduction to Quantum Computing**. Awarded by The Coding School.