

Raghav Awasthi

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Education

University College London, MEng Computer Science (First-Class Honours)

London, UK, 2023-2027

Modules: Discrete Mathematics, Principles of Programming, Design & Professional Skills, Engineering Challenges, Theory of Computation (highest mark in cohort), Object-Oriented Programming, Algorithms, and Mathematics & Statistics.

Dubai College

Dubai, UAE, 2016-2023

A-Levels: Computer Science, Physics, Mathematics, Further Mathematics, and EPQ (A*A*A*A*A)

Research & Work

- Created a website acting as a **DBMS** from scratch for **Adamas Data** as a **full-stack developer**. Connected the **postgres database** to the frontend with fully functional **searching & sorting** functionality, allowing users to login and retrieve/update data alongside a **map plotting** feature. **Skills:** FastAPI | Postgres | JS | LeafletJS | Python | Bash 2024
- In charge of training and deploying a **ThaiLLM** that is specialised for users in Thailand, as an AI/ML intern at **Tech Mahindra**. Contributed to the **Garuda** project - aided in adding **RAG** to augment the Bahasa LLM. Implemented NISTs PQC KEMs and integrating them with TLS as a QuantumSecurity intern. **Skills:** LLMs (HuggingFace, PyTorch) | Web-Scraping (Selenium) | TTS/ASR (Gradio, JS) | Building + using APIs (Flask) | IBM Qiskit | OpenSSL 2024
- Wrote a research paper about **Post-Quantum Cryptography** and Round 3 finalist algorithms of the **NIST PQC Standardization Project** under the tutelage of **Dr. Suleyman Uludag**, University of Michigan - Flint 🌐. **Skills:** Quantum Computing + Cryptography | Bench-marking (C) 2022
- Conducted research with **Dr. Jonas L. Juul**, Cornell University, investigating what cascades and components look like when simulating a **Susceptible-Infected-Susceptible infection model** on different network structures 🌐. **Skills:** SIS cascades + graphs (Networkx) | Displaying results (Matplotlib) 2022
- Aided in the development of a **run-time protection application against malware** at **Virsec Systems Inc.** Worked as a developer focusing on the modules running on **Linux subsystems** while simultaneously learning PenTesting. **Skills:** Unix System Administration (Bash) | Python 2021

Awards & Achievements

- Ranked **1st globally** (school) in the **ISMTEF** (International Schools Mathematics Teacher Foundation) in 2022.
- Gold Certificate** in the **Senior UKMT** (United Kingdom Mathematics Trust) in 2021 & 2022.
- Achieved **Distinction** in the **Euclid** and **Hypatia** University of Waterloo Mathematics Competitions in 2022.
- Ranked **Top 5** in the national **University of Wollongong, Dubai, Mathalon** in 2022.

Personal Projects

- Created a platform for students to learn about **Computer Architecture & Assembly Code**, and for teachers to use as a resource to assign problems as a learning tool. I also coded my own **Little Man Computer visualizations** and an **Assembly Code Editor** as part of this project 🌐. **Skills:** NodeJS | ExpressJS | SQL
- Created an **audio-book/story generator application** that can take in preferences for a storyline and produce a full story, which can then be read out loud via **TTS** 🌐. **Skills:** Python | Firebase | OpenAI | ElevenLabs | TypeScript
- Developing an **online platform** for **university students** to share resources and collaborate to understand module content and other queries. 🌐. **Skills:** FastAPI | NextJS | TypeScript | Postgres
- Recreated a **Chip-8 emulator** on Desktop that allows one to play retro games 🌐. **Skills:** Rust | Bash

Technical Skills

- Proficient:** *Languages:* Python | C | JavaScript | Bash | SQL *Frameworks/Tools:* NodeJS | ExpressJS | jQuery | Git | Flask | Postgres | FastAPI | Numpy | Pandas | PyTorch
- Experienced:** *Languages:* Rust | Java | Haskell | C++ *Frameworks/Tools:* Metasploit | Selenium | Docker | NextJS

Roles of Responsibility

- Head of the **Dubai Computing Community** with **350+ members** - organized hackathons and other events for high school and university students.
- Taught **4 1-hour sessions per week** to GCSE & A-Level students as a **Teaching Assistant** to the **Head of Computer Science** at Dubai College.
- Writer of technical blog articles for the **UCL Devs Blog** 🌐.