

# RAGHAV AWASTHI

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## EDUCATION

### University College London (UCL)

BSc Computer Science

Sept. 2023 – June 2026

On track for a 1st Class

### Dubai College

A-Levels

Computer Science, Physics, Maths, Further Maths, and EPQ (A\*A\*A\*A\*A)

Aug. 2016 – June 2023

## EXPERIENCE

### Full-Stack Developer | Adamas Data

Aug. 2024 – Oct. 2024

**Skills:** FastAPI, Postgres, JS, LeafletJS, Python, Bash

- Developed a **comprehensive full-stack web application** from the ground up, serving as a **database management system (DBMS)** with a user-friendly interface.
- Secured and optimised **database connections** by implementing robust endpoints for **advanced search and sorting functionalities**, ensuring high performance and security.
- Enhanced data visualization** through the integration of an interactive map-plotting feature, streamlining data interpretation, and improving user experience.

### AI/ML and Quantum Security Intern | Tech Mahindra - Makers Lab

June 2024 – Aug. 2024

**Skills:** HuggingFace, PyTorch, Selenium, Gradio, JS, Flask, Bash, IBM Qiskit, OpenSSL

- Led a team to **train and deploy ThaiLLM**, a fine-tuned Large Language Model (LLM) for users in Thailand specifically in the domains of healthcare, national identification, and other government services.
- Added **retrieval-augmented generation (RAG)** to **Garuda**, one of the company's biggest LLM projects.
- Implemented the National Institute of Standards and Technology's (NIST) **Post-Quantum Cryptographic (PQC) Key Encapsulation Mechanisms (KEM)** and worked towards integrating them with the **Transport Layer Security (TLS)** protocol.
- Wrote many internal **research reports and documentation** for technical and design choices made for various projects, including my own research into the most efficient frameworks in the relevant disciplines.

### Researcher | Cambridge Centre for International Research

May 2022 – Oct. 2022

**Skills:** Python, Networkx, Matplotlib

- Conducted research investigating **cascades and components** when simulating **Susceptible-Infected-Susceptible (SIS)** infection models on different network structure.
- Worked alongside **Dr. Jonas L. Juul, Cornell University** to analyse these changes.

### Post-Quantum Cryptography Researcher | Pioneer Academics

Feb. 2022 – July 2022

**Skills:** C, Bash, Linux

- Wrote a research paper about **PQC** comparing the NIST Standardization Project Round 3 Finalists' algorithms.
- Conducted lots of research, mathematical, and empirical analysis about **Code-based, Lattice-based, and Multivariate-based PQC algorithms** in particular.
- Worked under the tutelage of **Dr. Suleyman Uludag, University of Michigan - Flint**.

## PROJECTS

**Audio Book Generator App (E/Acc Hackathon)** **Skills:** Python, Firebase, OpenAI, ElevenLabs, TypeScript  
Developed a **mobile app** that takes in user prompts and preferences for a storyline and produces a **fully customised complete story as an audio book** 🌐 in.

### Assembly Code Visualiser and Editor

**Skills:** NodeJS, ExpressJS, SQL

Created a platform for students to learn about **Computer Architecture**. Can be used as a learning tool to assign practice **Assembly Code** problems, and includes a **Little Man Computer** visualisation 🌐.

## 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