

# RAGHAV AWASTHI

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## EDUCATION

University College London (UCL)	Sept. 2023 – June 2026
BSc Computer Science	Year 1 grade: First class
Dubai College	Aug. 2016 – June 2023
A-Levels	Computer Science, Physics, Maths, Further Maths, and EPQ (A*A*A*A*A)

## EXPERIENCE

<b>Full-Stack Developer</b>   <i>Adamus Data</i>	Aug. 2024 – Oct. 2024
<b>Skills:</b> <i>FastAPI, Postgres, JS, LeafletJS, Python, Bash</i>	
<ul style="list-style-type: none"><li>Developed a <b>comprehensive full-stack web application</b> from the ground up, serving as a <b>Database Management System (DBMS)</b> with a user-friendly interface.</li><li>Secured and optimised <b>database connections</b> by implementing robust endpoints for <b>advanced searching and sorting functionalities</b>, ensuring high performance and security.</li><li><b>Enhanced data visualization</b> through integration of an interactive map-plotting feature, streamlining data interpretation, and improving user experience.</li></ul>	
<b>AI/ML and Quantum Security Intern</b>   <i>Tech Mahindra - Makers Lab</i>	June 2024 – Aug. 2024
<b>Skills:</b> <i>HuggingFace, PyTorch, Selenium, Gradio, JS, Flask, Bash, IBM Qiskit, OpenSSL</i>	
<ul style="list-style-type: none"><li>Led a team to <b>train and deploy ThaiLLM</b>, a fine-tuned Large Language Model (LLM) for users in Thailand, specifically in the domains of healthcare, national identification, and other government services.</li><li>Added <b>Retrieval-Augmented Generation (RAG)</b> to <b>Garuda</b>, one of the company's biggest LLM projects.</li><li>Implemented the National Institute of Standards and Technology's (NIST) <b>Post-Quantum Cryptographic (PQC) Key Encapsulation Mechanisms (KEM)</b> and worked towards integrating with the <b>Transport Layer Security (TLS)</b> protocol.</li><li>Wrote internal <b>research reports and documentation</b> for technical and design choices made for various projects, including research into the most efficient frameworks in each relevant discipline.</li></ul>	
<b>Researcher</b>   <i>Cambridge Centre for International Research</i>	May 2022 – Oct. 2022
<b>Skills:</b> <i>Python, Networkx, Matplotlib</i>	
<ul style="list-style-type: none"><li>Conducted research investigating <b>cascades and components</b> when simulating <b>Susceptible-Infected-Susceptible (SIS)</b> infection models on different network structures.</li><li>Collaborated with <b>Dr. Jonas L. Juul (Cornell University)</b> to analyse these changes.</li></ul>	
<b>Post-Quantum Cryptography Researcher</b>   <i>Pioneer Academics</i>	Feb. 2022 – July 2022
<b>Skills:</b> <i>C, Bash, Linux</i>	
<ul style="list-style-type: none"><li>Wrote a research paper about <b>PQC</b> comparing NIST Standardization Project Round 3 Finalists' algorithms.</li><li>Conducted lots of research, mathematical, and empirical analysis about <b>Code-based, Lattice-based, and Multivariate-based PQC algorithms</b> in particular.</li><li>Studied under <b>Dr. Suleyman Uludag (University of Michigan - Flint)</b>.</li></ul>	

## PROJECTS

<b>Audio Book Generator App (E/Acc Hackathon)</b>	<b>Skills:</b> <i>Python, Firebase, OpenAI, ElevenLabs, TypeScript</i>
Developed a <b>mobile app</b> which takes in user prompts and preferences for a storyline and narration, and produces a <b>fully customised story as an audio book</b> 🎧 in.	
<b>Assembly Code Visualiser and Editor</b>	<b>Skills:</b> <i>NodeJS, ExpressJS, SQL</i>
Created a platform for students to learn about <b>Computer Architecture</b> . Can be used as a learning tool to assign practice <b>Assembly Code</b> problems, and includes a <b>Little Man Computer</b> 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