# Akshath Reddy Yennam

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## Education

2024 - 2027 BEng Computing at **Imperial College London** (**First Class** in Year 1)
2022 - 2024 A Levels at Sancta Maria International School (**Valedictorian**, 4 A*, 1 A)

## Work Experience

**ValueLabs**, *Software Engineering Intern* Jul 2025 – Sep 2025

- Rebuilt core components of a large-scale JD-to-resume semantic search platform using Qdrant and NodeJS backend services, im- proving system throughput and reducing request latency by **15x** ( **90s** → **6s**) through optimized indexing and caching.
- Developed a real time interaction service, for an AI voice interviewer, with clean modular interfaces, deterministic state transitions, and robust state management,
- Engineered high performance streaming pipelines, integrating **ASR** with efficient buffering, concurrency control, and predictable execution under load.
- Developed a full-stack **RAG** meeting assistant tool using a custom retrieval backend, improving query handling, scoring logic, and in-session state tracking.

**Heavenly Joy Foundation**, *Full Stack Developer (Volunteer)* May 2025 – Present

- Developing a full-stack, responsive website and cross-platform mobile app (**iOS** & **Android**) using modern frontend frameworks, backend APIs, and scalable deployment workflows.

**ValueLabs**, *Software Engineering Intern* Jul 2023 – Aug 2023

- Built end-to-end data processing and analytics components, implementing regression, clustering, and classification modules within production-oriented Python services.
- Developed an image classification service using **CNNs**, packaging preprocessing, inference, and evaluation into reusable components.
- Explored system design patterns behind data pipelines to strengthen engineering fundamentals and reliability.

## Projects

**PintOS - Operating System**

- Implemented **key OS subsystems** in PintOS including **scheduling**, user process management, and **virtual memory**, working across kernel threads, page tables, and low-level C data structures.

**Deep Research Agent**

- Designed and build a distributed multi-agent research workflow that uses AI to synthesize reports, with orchestrated task handlers, message passing, concurrency control, and modular execution stages. specialized sub-agents.
- Implemented **parallelized pipelines** and a shared virtual filesystem, improving research throughput by 5× and enabling structured fact-checked synthesis.

**Emulator & Assembler**

- Built a low level **emulator and assembler in C** implementing a custom ISA, register model, decoder, cycle based execution, and execution pipeline..

**Stock Price Predictor**

- Developed a time series forecasting pipeline using an **RNN** & **LSTM** based architecture, structured preprocessing, and stable training loops.
- Engineered data handling modules for windowing, feature scaling, and evaluation to benchmark model performance across regimes, achieving **80%** testing accuracy.

## Skills & Certifications

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|---|---|
| **Programming Languages** | Python, JavaScript, Kotlin, Java, C, HTML/CSS, Haskell |
| **Technical/Frameworks** | React, Next.js, Node, PostgreSQL, Docker, Git, REST APIs, Linux, Concurrency, Tensorflow, Langgraph, RAG |
| **Certificates** | Intro to Langgraph, MITx Introduction to CS, Harvard CS50 |