Caleb Kan

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EDUCATION

Imperial College London London, United Kingdom
Degree: Bachelor of Engineering – BEng, Computing Sep. 2023 – Jun. 2026
Grade: First-Class Honours (Predicted)

WORK EXPERIENCE

Software Engineer Intern Aug. 2024 – Present
Midas Advisory | Python London, United Kingdom
- Architected modular app using open-source LLMs to process financial data from web scraping (Playwright, BeautifulSoup4, Selenium) and APIs (FastAPI, Requests) for top 15 US banks.
- Engineered dual-model system: small LLM for efficient filtering of non-operating expenses, large LLM (LLama 3.1) for comprehensive reporting; implemented vector database (Milvus) with embeddings for data management.
- Designed adaptable architecture enabling seamless integration of new models, enhancing company's market intelligence and banking sector analysis capabilities.

Research Intern Jul. 2023 – Jul. 2023
Department of Computer Science, City University of Hong Kong | Python Kowloon, Hong Kong
- Led development of GDPR compliance checker extension with distinguished professor, utilising BeautifulSoup4, LangChain, and OpenAI's LLM for automated analysis.
- Designed user-friendly interface displaying website GDPR compliance status, enhancing awareness of data privacy practices.
- Created one-click feature for automated data erasure requests, streamlining GDPR rights exercise for users.

PROJECTS

ARMv8 Emulator, Assembler, and Visualiser | C May. 2024 – Jun. 2024
- Engineered ARMv8 architecture emulator and two-pass assembler in C, accurately simulating CPU operations and memory management per ARMv8 instruction set.
- Implemented efficient fetch-decode-execute pipeline, processing binary files to replicate ARMv8 behavior using advanced parsing and instruction algorithms.
- Developed SDL2-based GUI in C for real-time visualisation of emulator execution, featuring drag-and-drop assembly file loading and dynamic display of architecture components.

Chess AI | Kotlin Dec. 2023 – Jan. 2024
- Engineered Chess AI in Kotlin for pawn race game, implementing game logic and ASCII-based terminal GUI.
- Designed user interaction system with move validation and feedback, enhancing gameplay experience.
- Implemented minimax algorithm with alpha-beta pruning for AI decision-making, creating an efficient and challenging opponent.

AI Research Agent | Python, NoSQL Jul. 2023 – Aug. 2023
- Engineered AI web research agent using Python, LangChain, and OpenAI models; integrated BeautifulSoup4 for scraping and generating cited summaries.
- Implemented Twitter API for automated content posting and MongoDB Atlas for secure geolocation tracking, enhancing analytics capabilities.
- Contributed to global visualisation project, mapping AI agent usage worldwide to derive insights on geographical reach and user engagement.

TECHNICAL SKILLS

Languages: **Native**: English · Mandarin · Cantonese
Programming Languages: C · Haskell · HTML/CSS · Java · Kotlin · Python · SQL
Frameworks: Bootstrap · FastAPI · Firebase · Flask · LangChain · MongoDB · MySQL · PostgreSQL · SQLite
Libraries: Matplotlib · Numpy · OpenCV · Pandas · TensorFlow
Developer Tools: Android Studio · Atom · BitBucket · CLion · Git · GitHub · GitLab · GNU Debugger · Google Colab · Hugging Face · IntelliJ · LaTeX · Ollama · PyCharm · Unix · Valgrind · Visual Studio · Visual Studio Code · Xcode