John Ling

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Education and Qualifications

2017 – 2023 Garden International School, Malaysia

A Levels 2023

Mathematics: A* Physics: A Computer Science: A*

IGCSEs 2021

Physics: A* Mathematics: A* History: A* Chemistry: A*
Music: A* Biology: A* English Literature: A* English Language: A*
Computer Science: A*

2022 CS50's Introduction to Computer Science
2023 CS50-AI's Introduction to Artificial Intelligence

Work Experience

November – December 2023 **AmBank Group,** Data and Digitalisation Intern

- Built a **RAG + LLM system** in 2 weeks that allowed users to **receive tailored financial advice** and compare **over 1000 Malaysian companies** for investing. Users could converse with the model and ask for further clarification on specific details of its responses. Built using React, MySQL and Flask. Learned a lot about RAG systems, LLMS and vector databases.

October – November 2023 **AmBank Group,** Cybersecurity Intern

- Briefly **worked alongside L1 SOC** analysts at AmBank Group, a bank affiliated with **ANZ**, where I handled alerts from the bank's SIEM platform.
- Was present for a **cybersecurity drill** in the bank and saw how the technical and management team handle a ransomware attack.
- Found and **reported a weakness** in the company's data leakage prevention system that could be used in a possible data exfiltration.
- Learned more about penetration testing and went through previous tests with AmBank's VAPT team.

June – July 2022 **AmBank Group,** IT Intern

- Got a high level view of the general operations within the bank such as the inner workings of their **SIEM system**, their general networking structure and their disaster recovery procedures.
- Learned good practices for servers that I would implement in my own server such as least-privilege access, **SSH hardening** and automated **backups using LVM**.
- Developed communication and networking skills from conversing with individuals at various ranks in the company

Languages and Tools

Languages: Python, Javascript (React, Node and Vanilla), C, C#
Tools: DigitalOcean, Docker, Firebase, NGINX

Top Projects

- **Pseudocode Compiler**: A complete transpiler built using C++ that takes files containing a made up "pseudocode" language and converts it to Python. Uses a handmade lexer, **recursive descent parser** and code generator. The compiler also performs **semantic analysis** to find undeclared variables and has type checking.
- **johnling.me**: My personal portfolio website where more details about me and my projects can be found. Built using Bootstrap, Sass and Javascript.
- **Cameraman**: A **camera that follows you in real-time**. Electronics project that used Python with **OpenCV** to perform **live face detection** using a **Caffe model**. Coordinates of the face are sent to a standalone ATmega328p microcontroller that uses motors to adjust a camera to the position. **Device was deployed within my school class** to improve the hybrid teaching experience.
- **Trello Tabliss Integration**: Forked the Tabliss browser extension and added my own modifications to **pull data from my Trello board** and display it conveniently in the browser homepage. Trello module was written in **React** and used **Firebase with NodeJS** to handle the API calls to Trello.

Other Projects

- **wikihopper.johnling.me:** React web game that uses the wikipedia API two random wikipedia pages and gives the user 10 links or hops to go from point A to B.
- **Desktop Kahoot Bot:** C# desktop application that uses Selenium to simulate virtual kahoot players. Give the bot a room code, the number of bots and their name and the application will create virtual players.
- **CS Fundamentals:** Various C and Python implementations of fundamental data structures such as Linked lists, hash tables and trees along with algorithms such as binary search or Dijkstra's algorithm.
- **Covid Companion:** Tkinter based desktop app that used Wit AI NLP to determine intent of a user's question about COVID-19 such as statistics and myths. The application would use BeautifulSoup to gather data from the worldmeter website to present to the user.
- **Arduino RFID Lock**: Used a standalone ATmega328p along with an RFID reader to created a battery operated door lock. Used open source library Minicore along with a USBASP programmer to manually set the clock speed and brownout voltage.