Matthias Ong

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A self-driven developer interested in AI and full stack. Always learning and creating.

Skills

Python | C | C++ | HTML | CSS | JavaScript | Flask | SQLite | Bootstrap | Kotlin | React | Node | Agile | Git
Firebase | AWS | Cloud Computing | WebXR | Babylon.js | OpenGL | Vulkan | CUDA | x86-64 Assembly
Frontend | Backend | Full-stack | Machine Learning | Computer Graphics | Virtual Reality | Game Development

Education

Singapore Institute of Technology, Singapore, Joint Degree w/ Digipen, 09/2020 - 04/2024
Bachelor of Science with Honours in Computer Science in Real-Time Interactive Simulation
- *GPA: 4.55/5 (Honours with highest distinction)*
- *SiTizen Ambassador* – Student Leadership under Community Leadership And Social Innovation Centre
- *Teaching Assistant* – Taught students CSD2160 Operating Systems and CSD2181 Data Structures
- *Overseas Immersion Programme* – Completed 12 weeks of study in Redmond, WA, USA

Temasek Junior College, Singapore, *GCE 'A' Levels, 2017*
- 4 H2 Physics, Chemistry, Mathematics, Economics

Experience

Project Intern — DSO National Laboratories   **Aug 2023 - Apr 2024**
- Create a cybersecurity simulation environment to test network configurations with Reinforcement Learning (RL) AI agents, using Microsoft's CyberBattleSim, OpenAI Gym Interface, Python.

Software Engineer, Intern — Ministry of Home Affairs   **May 2023 - Aug 2023**
- Developed an internal full-stack cross-platform app (iOS, Android, Web) using HTML, CSS, TypeScript, React, Ionic Framework and Google Cloud Firebase (Authentication, Firestore) to improve QoL of officers.
- Researched and prototyped a custom AI-powered application on internal datasets using LangChain, Azure OpenAI API and Python for future organisational use.

Other Jobs — F&B, Retail Assistant, GrabFood Delivery, National Service Police Officer (2018 - 2022)

Projects

AllyAlley (solo, Flask social media website)
- Added user authentication, uploading, deleting, commenting on, and liking photo and video posts.
- Made with Flask, HTML, CSS w/ Bootstrap, JavaScript, Python, AJAX, SQLite, was hosted on PythonAnywhere

MovieCompanion (team of 5, Python movie recommender)
- Custom movie recommender implemented in Python
- Performed data cleaning and processing on the MovieLens dataset
- Implemented hybrid ML algorithm (Content-based + Collaborative filtering)
- Performed evaluation and testing

CaptainJumperBoy (team of 5, 2D Android game in Kotlin)
- Implemented SQLite local database using Android Room to store highscores
- Implemented Physics & some gameplay features
- Helped out with using accelerometer, touch sensors for game controls
- Used Android architecture components, Coroutines and LiveData

Iconoclasm (team of 10, custom C++ 3D game engine + RPG Hack & Slash game)
- Custom C++ 3D game engine + hack & slash game made using it
- 3D Physics programmer, integrated engine with PhysX
- Graphics programming with Freetype Font library & OpenGL
- Assist with engine related tasks and debugging