Guan Chern Liew (Charles)

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About Me

- With a Bachelors Degree of Computer Science from the University of Adelaide, I am enthusiastic for the dynamic world of technology and computing. My objective is to leverage my problem-solving aptitude, and creative thinking skills to contribute in the field of computer science as a software engineer.

Education

Bachelor of Computer Science | The University of Adelaide **July 2021 – November 2023**

- 6.65/7.00 GPA

Projects

Blog Lah | **January 2024 –February 2024**

- Developed a full stack webpage using latest industry-adopted technologies and frameworks
- Ensured privacy with password encryption and user authorisation with web token to display certain features to owner
- Implemented the main Create, Read, Update and Delete function for handling a blog post
- Integrated linting during implementation process for a more standardise code structure
- Relevant tools: **React.js, MySQL, Javascript, HTML, Scss, JWT**

Visualise cyber-attacks with Attack Flow | **July 2023 – November 2023**

- Demonstrated strong proficiency in web application development, knowledge of both frontend and backend
- Collaborated effectively with a diverse team of 9 members, each contributing specialised skills
- Utilised an agile framework, scrum process, with biweekly sprints and weekly progress snapshots
- Contributed largely in designing and setting up database, including seeding and backend routes
- Relevant tools: **Docker, Node.js, TypeORM, MySQL**

Risc-V RV64I ISS (Instruction Set Simulator) | **February 2023 – June 2023**

- Developed an instruction set simulator RV64 simulator to simulate execution of a computer's instruction
- Simulator contains representations of the computer's memory and internal registers of CPU, a total of 52 instructions
- Implemented the Zicsr instruction set extension and a subset of the RISC-V privileged architecture for handling 13 exceptions and interrupts in user mode and machine mode
- Incorporated Test-Driven Development methodologies throughout simulator implementation
- Relevant tools: **C++**

Social Event Planning Webpage | **July 2022 – November 2023**

- Built a full-stack social event planning web application in a team of four.
- Key features are managing, editing events, email verification, account settings and searching events with filter etc.
- Contributed majorly in database seeding, web page design and set up backend routes for functions
- Relevant tools: **MySQL, Node.js, Vue.js**

Nand2tetris **February 2022 – June 2022**

- Strengthened fundamental computer science concepts by building a modern computer from first principles
- Designed and implemented basic logic gates and progressively complex circuits using Hardware Description Language (HDL)
- Developed a fully functional Arithmetic Logic Unit (ALU) and Central Processing Unit (CPU), forming the core of a custom computer architecture
- Relevant tools: **Nand2tetris tools (VMEmulator, HardwareSimulator, Assembler)**

Extracuriccular

- Member of the Computer Science Club and Competitive Programming Club of University of Adelaide
- Placed 9/40 in an ICPC style competition hosted by the Competitive Programming Club

Technical Skills

- Proficient: **C++, Python, MySQL**
- Experience: **C, HTML, CSS, Javascript, Node.js, Vue.js, Git, Java, RISC-V Assembly**