Matthew Gani

+65 98208363 • e0424805@u.nus.edu • GitHub • LinkedIn

EDUCATION

NATIONAL UNIVERSITY OF SINGAPORE   **Aug 2019 – Present**

Bachelor of Engineering (Computer Engineering)
- Major: Computer Engineering
- Expected Date of Graduation: May 2023
- GPA/CAP: 4.72 / 5.0
- Dean's List (AY2021/2022 Semester 2)

Relevant modules taken:
- Programming Methodology (C)
- Data Structures and Algorithms (C++)
- Software Engineering & Object-Oriented Programming (Java)
- Introduction to Information Security (Python)
- Computer Architecture (Verilog, Assembly)
- Database Systems (PostgreSQL)

WORK EXPERIENCE

Autodesk, Software Engineer Intern   **June 2021 – Nov 2021**
- Utilized AWS tools to migrate data from Oracle Database to AWS RDS Database
- Identification and technical documentation of changes to replace enterprise application with AWS cloud system
- Created and Dockerized Spring Boot REST API application
- Built a Spring Boot microservice that listens to AWS Kinesis stream and pushes events to AWS SQS
- Enhanced communication skills through Agile Methodology with Scrum meetings

ACADEMIC PROJECTS

Augmented Reality Laser Tag System (Capstone Project)   **Jan 2022 – May 2022**
- Worked in a team of 5 to design a 2-player AR laser tag system, applying hardware and software engineering design principles in implementing a complex embedded system
- Implemented real-time and concurrent communication between a server on an Ultra96 FPGA and laptop/phone clients
- Utilized Socket.IO, TCP Sockets and MQTT for communication between system components
- Ensured secure AES communication with SSH tunnelling

Computer Architecture FPGA Microprocessor Project   **Aug 2021 – Nov 2021**
- Designed a RISC-V processor using Verilog on a FPGA
- Parsed instructions from RV32I Base Integer Instruction Set
- Implemented floating point operations as part of open-ended enhancements

Software Engineering & Object-Oriented Programming Project   **Aug 2020 – Nov 2020**
- Engineered a command line based scheduling application in a team of 5 using Java
- Learned and became proficient in revision control, different types of testing, UML, technical documentation and debugging
- Strengthened communication and problem-solving skills by facilitating team discussions

- Determined user needs and learned to craft effective and secure solutions

NUS Orbital (Independent Software Development Project)   **May 2020 – Aug 2020**

- Developed and conceptualized an integrative calendar android application using Java in a team of 2
- Implemented features using Microsoft Graph API, NUSmods API and Firebase
- Created an email parser that creates events with date/time using Regular Expressions
- Cultivated independent and self-directed learning
- Achieved Apollo 11 (Advanced)

CO-CURRICULAR ACTIVITIES

NUS Electrical and Computer Engineering Club, Marketing Head   **Sep 2020 – May 2021**

- Led a group of 5 members to aid the club with marketing related events
- Planned and managed Zoom meetings for marketing members
- Organized the sourcing of virtual Industrial Visits and sponsors for welfare packs
- Collaborated with other parts of the ECE Club to promote sponsors

ADDITIONAL INFORMATION

- **Programming Languages:** Python, Java, SQL, C, C++, JavaScript, Assembly (ARM, RISC-V), Verilog
- **Frameworks/SDKs:** React, Node.js, Express, JUnit, Jest
- **Developer Tools:** Git, GitHub, Visual Studio Code, Docker, Postman, Heroku, SQLDeveloper, MySQL Workbench
- **Database:** MongoDB, Firebase, PostgreSQL
- **AWS Tools:** Schema Conversion Tool, Database Migration Service, Secrets Manager, Simple Queue Service
- **Languages:** English, Mandarin
- **Interests:** Music, Tennis and Gaming