ALVIN BEN ABRAHAM

+65 91357145 | alvinben@u.nus.edu | github.com/alvynben | alvinben.com

EDUCATION

National University of Singapore (NUS)   **Aug 2020 - Apr 2024**
Bachelor of Engineering (Computer Engineering) Honours
- Second Major in Innovation and Design.
- Relevant Coursework: Programming Methodology (Python), Data Structures and Algorithms (C++), Software Engineering (Java), Real-Time Operating Systems (C), Digital Design (Verilog).
- Accepted into NUS Overseas Colleges (Silicon Valley) attending classes at Stanford University MS&E.

RELEVANT EXPERIENCE

Software Engineer, Unit21 (San Francisco)   **Jan 2023 - Dec 2023**
- Built SOC2 compliant frontend and backend features for financial compliance management tools processing upwards of >1B transactions per call.
- Started working on integrating OpenAI LLM functionality to enable customers to identify patterns and make Matplotlib graphs out of data shared with Unit21.

Software Engineer, TikTok eCommerce / ByteDance   **May 2022 - Nov 2022**
(Singapore)
- Planned and constructed efficient and highly reusable front-end systems driving complex web applications for e-commerce products, increasing unique views by 110% and retention rate by 24%.
- Collaborated with product design, product management and software engineering teams to deliver more than 3 large-scale features across more than 5 countries over 3 months.

Full Stack Developer, Interseed Co (Singapore)   **Jul 2021 - Jul 2022**
- Accomplished mobile responsiveness for Interseed's Social Networking application (app.interseed.co) to increase percentage of mobile users from 20% to 74% of current user base.
- Collaborated with development team to design features for initial launch over 5 weeks, and collected user feedback to perform bug fixes with React, Typescript, and Bootstrap.
- Devised new REST API endpoint in NodeJS server with ExpressJS, by interfacing with MongoDB database to group more than 200 website users by location for display on a dynamic map.
- Championed product management methodologies (user persona, brainstorming) to develop product features to specifically assist main customer base over 2-week timeline.

Computer Science Teaching Assistant, National University of   **Aug 2021 - Dec 2021**
Singapore
- Taught and graded a batch of 22 students about fundamental programming concepts underpinning Python and Object-Oriented Programming.
- Received 4.3/5 and above on all metrics from student feedback.

Software Project Manager, NUS RoboMasters (Singapore)　　　**Aug 2020 - Aug 2021**
- Spearheaded computer vision team to deploy Yolov5 on PyTorch and Yolov4 on TensorRT along with Robotic Operating System (ROS) 2 to do target detection of a custom dataset with less than 20ms latency.
- Integrated CSI camera with NVIDIA Jetson Xavier NX with Ubuntu 18.04 to fix pre-existing robot hardware.

PROJECTS

Cloud Infrastructure Manager, Ninja Way　　　　　　　　　**Feb 2022**
- Spearheaded development of a mobile application using Flutter (Dart) during 12-hour NinjaVan hackathon to show drivers best (speed and convenience) route to complete all deliveries.
- Devised and implemented cloud architecture using Google Cloud Functions, Firestore, and API gateway costing less than $4 per month to handle computation so as to reduce smartphone battery consumption for delivery drivers.

Technical Lead, Fridget　　　　　　　　　　　　　**Sep 2021 - Nov 2021**
- Developed a Command Line application with Java, with user/developer guide in less than 5 weeks to help users manage fridge inventory and reduce food wastage.
- Took advantage of Gradle to build applications for production, and took advantage of Github Workflows to enable continuous integration while enforcing coding standards.

Team Leader, SAM (Super Autonomous Robot) II　　　　　**Aug 2021 - Nov 2021**
- Constructed a robot to receive instructions via WiFi through an ESP32 sending UART instructions to a FRDM-KL25Z used to control movement of robot, with less than 2ms of lag between instruction and action.
- Managed development of a Real-Time Operating System (RTOS) for robot with Keil-RTX in C.

Team Leader, SAM (Super Autonomous Robot)　　　　　　**Jan 2020 - May 2021**
- Wrote and designed code as a team using ROS 2 and Python for SAM to navigate a randomly generated maze with a wall-following algorithm.
- Designed custom Printed Circuit Board to identify targets emitting IR radiation using a thermal sensor, and launch projectiles using a combination of 5 motors.
- Achieved 1st place versus 9 other teams for overall project evaluation.

CO-CURRICULAR ACTIVITIES

President, NUS Innovation and Design Programme Students'　　**Dec 2022 - Dec 2023**
Club
- Led planning and execution of a self-initiated nationwide inter-university ideathon sponsored by James Dyson Foundation, Silicon Laboratories, and nSearch Global with a prize pool of $6000.

President, ACJC (Anglo-Chinese JC) Debate and Oratorical　　**Jun 2016 - Jun 2017**
Society
- Planned and organized regional and international debating championships with over 200 participants.
- Obtained awards such as TPJC Oratory Championship Finalist, 2016 and Asian World Schools Debating Championships Semi-Finalist, 2016.