Tan Kui An Andrew

B. Eng., Electrical - Mechatronics, Universiti Teknologi Malaysia
CPGA: 3.90 | Dean's Award | 2016 - 2020

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Sincerely seeking opportunities for further professional career growth in robotics or autonomous driving.

WORK EXPERIENCE

R&D Software Engineer, DF Automation & Robotics Sdn Bhd *August 2022 – Present*

`ROS/C++/Python/Javascript/Django/Svelte/Git/Linux/CMake`

- Actively involved in core technology, focusing on feature development, bug resolution and feature enhancements.
- Actively contributed to the reverse engineering and software integration of partner's autonomous trucks, gaining exposure to robot integration and communication protocols such as Modbus and CAN. Additionally, acquired skills in programming SICK safety controllers using FlexiSoft Designer software.
- Collaborated on the on-site deployment of automation solutions with autonomous robots.
- Involved in conducting testing to validate product quality and performance, contributing to product reliability.
- Involved in customer support, assisting users in analyzing issues and resolving them effectively.
- Collaborated on the creation of user manuals and documentation to support the release of new product versions.

R&D Software Engineer, ViE Technologies Sdn Bhd *August 2020 – March 2022*

`CMake/C++/Qt/NodeJS/Angular/TypeScript/PostgreSQL/Docker/Rancher/GitLab CICD`

- Performed feasibility study to kickstart 2 new products, and acted as the main developer with minimal guidance.
- Designed and developed a desktop application that is integrated with GenICam standard with fundamental functions such as streaming camera image and configuring camera parameters.
- Designed and developed a configurable and flexible web application for monitoring and analyzing electrical usage.
- Developed an Angular Web App for storing documentations such as project setup procedures, flow charts, technical notes and cheat sheets.
- Conducted knowledge sharing sessions about GitLab CI/CD, Docker, CMake.

PERSONAL PROJECTS

- Path Finding Visualizer `[ C++/wxWidgets/CMake/Docker ]`
  - A project that visualizes some path finding algorithms such as Dijkstra, A* Search, BFS, Greedy Best First Search & Bi-directional BFS.
- Path Planning Visualizer `[ C++/wxWidgets/OpenCV/CMake ]`
  - A project that visualizes the discrete path planning process, from defining environment geometry & robot geometry till generating path on the graph generated based on the decomposition method selected.
- Image-based Sudoku Solver `[ Python/OpenCV/Docker ]`
  - A project that uses some image processing techniques to retrieve the sudoku from an input image, transform it into a 2D vector, and then solve it using the backtracking algorithm.

ACHIEVEMENTS

- Completed Udacity Nanodegree - Robotics Software Engineer, 2022
- Completed Udacity Nanodegree - Intro to Self-Driving Cars, 2022
- Champion in NI Autonomous Robotics Competition, 2019
- Champion in RoboCup @Home Education League in RoboCup Asia Pacific, 2017

SKILLS

- Experience in object-oriented programming using C++, Python and Javascript
- Experience in robotic software development and robot integration involving ROS, sensor technology and communication protocols
- Experience in analytical problem-solving and reverse engineering
- Experience with Linux System and UNIX commands
- Experience with version control, continuous integration and continuous delivery using GitLab
- Experience with containerised development, deployment and management using Docker and Rancher
- Experience with front-end and back-end web development using Angular, Svelte, NodeJS, PostgreSQL, Django
- Familiar with software development life cycles and Agile practices
- Basic understanding of path planning algorithms and artificial intelligence
- Commitment to continuous learning and self-improvement
- Capable of rapidly acquiring and applying new skills and knowledge through observation and mentorship