Shaw Bin NYANG

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Bio

Recent graduate with an interest in software engineering (Backend). I adapt in both self-starting and collaborative environments while staying focused on achieving high-quality results. Currently seeking opportunities to expand my learning and build upon my developer skills.

Education

National University of Singapore 2017 - 2021

B.Eng Mechanical Engineering, Major in Innovation & Design

- Distinction, GPA: 4.38/5.0
- Student Club: Engineering Good, Robotics (SubT Challenge)

Experience

DSO National Laboratories June 2021 - Dec 2021

Robotics Engineer (System/ Mission team)

- Developed a routing library in C++ to replace commercial software. Features include: Single/ multi-query planners, "no-go-zones", graph building/indexing of GIS data.
- Improved the library's spatial indexing of GIS data by multifold.
- Ability to resolve challenges in creative, efficient and effective ways.
- Surveyed open-source probabilistic motion planning algorithms for off-road planners.
- Supported upgrading work on robotic systems such as battery monitoring and sensors' mounting.

Agency for Science, Technology and Research (A*STAR) Aug 2020 - May 2021

Final Year Project

- Localization and Mapping for automated aircraft inspection robot.
- Implemented a proof-of-concept which uses a novel laser-based approach for robot to self-localize relative to an aircraft using techniques such as SLAM and template matching.

Projects

Portfolio Landing Page (Link) Jan 2022 - Present

- Started learning full stack web development, and designed a landing page from scratch.
- Technologies used include: HTML5, CSS, BootStrap, Javascript.

NUS SEDS - SUBT | Mechanical & Low-Level Control Aug 2019 – May 2021

- Participated in DARPA SubT Challenge Urban Circuit
- Involved in the mechanical design of robot fleet and robotics-focused mechanisms.
- Implemented global path planner for drone using A* algorithm. Integrated exploration stack for virtual challenge.

GUIDECK | Computer Vision & Mechatronics (Link) Jan 2019 – Dec 2019

- A motorized smart system to improve productivity and safety in PPVC construction by reducing the reliance on manual positioning and human judgement.
- OpenCV (real time colour masking & distance measurement) to eliminate 'eyeballing' measurements.

WaterBloc | Mechanical and Arduino Programming (Link) Jan 2019 – Apr 2019

- Smart showering device which provides real-time feedback of water usage and optimal goal settings.
- Control of solenoid valve with Arduino and measuring rate of water flow with flowmeter.
- First place in our problem statement category.

Skills

Skills: ROS, Mobile Robotics, SLAM, Point Cloud Library, Mechanical Engineering, Prototyping, 3D printing
Languages: C++, Python
Tools: Solidworks, Autodesk Fusion 360, Git, OpenCV