JUN JET TAI

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EXPERIENCE

Mar 2022 – Jan 2023   Principal Maintainer of PettingZoo and SuperSuit, Farama Foundation
- Most downloaded multi agent reinforcement learning libraries, >40k monthly downloads.
- Coordinate with >10 developers to steer direction of library, providing insight on how APIs should be structured for best ease-of-use.
- 60+ PRs contributed, 100+ PRs merged, 30k+ lines of code.
- Also contributed to other libraries – Gymnasium, Gymnasium Robotics, responsible for sparse reward environments in Gymnasium Robotics and domain randomization in Gymnasium.
- Co-authored the Shimmy library – a library for interfacing the PettingZoo and Gymnasium API with other popular reinforcement learning libraries (e.g. DMControl).

Mar 2020 – Aug 2020   Simulation Engineer, Swisslog Malaysia Sdn. Bhd.
- Co-developed internal tools for warehouse automation simulation using Emulate3D.
- Trained replacements prior to resignation, left to pursue a PhD.

Aug 2018 – Dec 2019   Research Assistant, Taylor's Unmanned Aerial Vehicles Research Group
- Supervised by Dr. Swee King Phang, oversaw induction and training of 5 new members and pilots.
- Developed a novel obstacle avoidance and navigation algorithm for UAVs, 2 papers published.
- Helped develop vision-based target tracking for UAVs using novel Siamese Net inspired architecture.
- Designed custom middleware for bespoke UAV functionality using ROS and PX4, enabling the bootstrapping of 3 other projects using the same UAV platform.

Jan 2019 – Mar 2019   Software Engineering Intern, Fourfang Sdn. Bhd.
- Built precision landing algorithm with bespoke check safes for 5 kg Venus UAV, used in a 24/7, automated docking and charging infrastructure, increasing stakeholders' confidence in the system.

EDUCATION

2020 – Present   PhD in Artificial Intelligence and Engineering – Coventry University, UK
  Topic: Autonomous AI Enabled Drones for Predictive Maintenance

2016 – 2020   Bachelor of Engineering (Honours) Mechanical Engineering – Taylor's University, Malaysia
  CGPA 3.92/4.00

CORE SKILLS

- **Deep Learning:** Reinforcement Learning, Computer Vision, Uncertainty Quantification, Generative Modelling
- **Robotics:** SLAM, Sensor Fusion, Electronics and Mechanical Design, Communication Protocols
- **Languages and Frameworks:** PyTorch, WandB, Scipy, Pandas, Matplotlib, Numpy, Sklearn, C/C++, C#, Matlab, Go, Rust, Docker, CI/CD, MySQL, MATLAB, PX4, ArduPilot, ROS, Dronekit, Arduino
- **CAD Software:** SolidWorks, EasyEDA, EagleCAD, Onshape
- **Linux-based Operating Systems:** Ubuntu, RedHat OSes, Arch btw.

NOTABLE PROJECTS

PyFlyt – UAV Flight Simulator for Reinforcement Learning Research
- A library for researching reinforcement learning algorithms on UAVs,> 70k downloads.

CrazyFlyt – Crazyflie 2.x Swarming Controller
- A library for swarming Crazyflie 2.x UAVs with a flexible software/hardware interface, built using PyFlyt.

SAMTool – Semantic Segmentation Dataset Creation Tool
- A tool for rapidly creating semantic segmentation datasets using the Segment Anything Model by Meta.

RIDS – UAV Remote ID Spoofer on ESP8266
- 16 fake UAV Remote IDs in the air all flying in random directions, featured in various videos .

Wingman – A Horizontally Integrated Library for Managing Hundreds of AI experiments At Once
- Automated weights versioning, Weights & Biases integration, hyperparameter organization.
- Logged >18,000 tracked experiments totaling >100,000 hours of AI training in one year.