KEVIN MA YUCHEN

Email: yuchen_ma@mymail.sutd.edu.sg Mobile: 83939928
GitHub: https://github.com/Kevinskwk LinkedIn: https://www.linkedin.com/in/kevin-ma-yuchen

EDUCATION

Singapore University of Technology and Design (SUTD) **Singapore**
Bachelor of Engineering (Engineering Product Development), Honours May 2019 - Sep 2022

- Focused track: Robotics
- Cumulative GPA: 5.15/5.0 (expected Honours with Highest Distinction)
- Full Scholarship awarded by Sembcorp Industries to Top 5% students from high schools in China

WORK EXPERIENCES

Yijiahe Technology Co., Ltd (A high-class provider of robot technology solutions for special industries in China) **Nanjing, China**
Intern, Junior C++ Engineer Dec 2019 - Jan 2020

- Developed a bug-free ROS node that records the operation time information of an electricity maintenance robot using C++ and SQLite.
- Collated the ROS system structure and information flow of the electric maintenance robot for future re-designing of the system architectures.

AutoCore Intelligent Technology Co., Ltd(A start-up devoted to affordable intelligent vehicle platforms) **Nanjing, China**
Intern, Assistant Deep Learning Engineer Aug 2019 - Sep 2019

- Performed sensors testing and data collection on Robot Operation System (ROS) for LIDAR mapping of self-driving cars.
- Wrote a data augmentation algorithm with Python and OpenCV for deep learning dataset expansion and performed data augmentation on a data set of over 4,000 images.
- Performed dataset creation with data augmentation and YOLO object recognition model training for traffic light and parking lot detection for self-driving cars with more than 95% accuracy.

ACADEMIC PROJECTS

Singapore University of Technology and Design **Singapore**
RoboClash 2020, Organising Committee Sep 2019 - Present

- Working closely with other committee members in holding SUTD's biggest annual internal robotics competition. Liaised with external sponsors and relative school departments to ensure the smooth operation of the competition.
- Developing and fabricating a 36 m^2 arena out of plywood and extruded aluminium profiles.
- Developing a novel IoT scoring system utilising Raspberry Pi and OpenCV.

SUTD Doggo Project, Mechanical Engineer Aug 2019 - Present

- Modifying and assembling the mechanical structure of an open-source quadruped robot which can perform various acrobatic moves. Making improvements on some design flaws of the original project.
- Collaborated with multiple suppliers and procured components for the robot with 20% lower price.

Thor Project, Student Researcher Jun 2019 - Present

- Implementing Reinforcement Learning with Gym and Ray for a one-metre-wide transformable dual-rotor aerial craft controlling system model training to get a more robust controlling system that is able to stabilise the aerial craft in a range of 2 m^3.
- Simulating and visualising the flying trajectory of the aerial craft with PyBullet to analyse the result of the training.
- Collaborated with Professor to research on the physical mechanism and control system of transformable dual-rotor aerial craft.

REMATCH Project, Chief Software and Electronics Engineer Oct 2019 - Dec 2019

- Built an arcade game console that allows users to play Pong game with rope-pulling exercise as a product for the course 3.007-Introduction to Design.
- Single-handedly designed the electronics system architecture that features modularity and maintainability. Built highly sensitive rotation encoders from scratch with infrared sensors and Arduinos. Developed a Pong game running on Raspberry Pi with clear UI using Python 3.
- Went through detailed design process in a team of five to optimise user experience, functionality and aesthetics of the product.

LinoRobot Project, Software Engineer May 2019 - July 2019

- Built a 7kg two-wheel driven robot that is implemented with tele-operation, Simultaneous Localisation and Mapping (SLAM), and autonomous navigation based on Robot Operation System (ROS).
- Collaborated with a team of eight to finish debugging and trouble-shooting and took down detailed professional documentation.

CO-CURRICULAR ACTIVITIES

SUTD Organisation of Autonomous Robotics (SOAR) **Singapore**
Secretary Jun 2019 - Present

- Working closely with an Executive Committee of 7 individuals to lead the organisation of about 70 members. Planning for weekly sessions of the club and external events and keeping track of club logistics. Processing documents required for activities and log down meeting notes, managing and updating the club's folders, documents and records.
- Worked as event organizer and workshop facilitator for SUTD BuildSomething 2019, a week-long SolidWorks & Arduino workshop course, with the end product of a line-tracing robot.
- Improved the skills and proficiencies of about 30 members of the club by organizing 6 workshops that cover robotics and other technical concepts (SolidWorks, Arduino, PID, Git, Linux and ROS).

SOCIAL VOLUNTARISM

Tanjong Pagar Community Club Youth Executive Committee Soccer Team **Singapore**
Event Organiser Aug 2019

- Organised a team bonding event for more than 80 team members and received positive feedback from attendees.
- Collaborated directly with the Ministry of Education (Singapore) to engage the new scholars by giving speeches and conducting sharing sessions for scholars.

ADDITIONAL INFORMATION

- Technical Skills:
  - Proficiency in: Python 3, C/C++, ROS, Arduino, SolidWorks
  - Experienced with: OpenCV, Linux, Machine Learning, SQL, MATLAB, Fusion360

- Language Proficiency:
  - English written and spoken (Fluent)
  - Mandarin written and spoken (Native)

REFERENCES

- Name: Shen Yi
  Company: Yijiahe Technology Co., Ltd
  Designation: Senior Software Engineer
  Email: shenyi@yijiahe.com

- Name: Chen Cheng
  Company: AutoCore (Nanjing) Intelligent Technology Co., Ltd
  Designation: CTO
  Email: cheng.chen@autocore.ai