Jason Wang

Phone:
Email: vuwij1@gmail.com

GitHub: https://github.com/Vuwij
Website: http://vuwij.github.io

Education

2020 Sept - Current

Electrical and Computer Engineering   University of Toronto
Masters of Computer Engineering in Robotics and System Controls
Relevant Courses: Convex Optimization, Game Theory, Robust and Optimal Control

2015 Sept - 2020 April

Electrical and Computer Engineering   University of Toronto
Bachelor of Computer Engineering with Honours, Minor in Robotics and Business
3rd Year GPA: 3.75   4th Year GPA: 3.91
Dean's Honours List x8, NSERC USRA Summer Research Award, Gordon Slemon Award for best 4th year project
Relevant Courses:
Robotics: Robot Modeling and Control, Control Systems (Classic, Modern, Discrete), Differential Geometry
AI: Inference Algorithms and Machine Learning, Probabilistic Reasoning, Introduction to AI

Technical Skills

Programming Languages: Python, C/C++, MATLAB, C#, Mathematica, LaTeX
Software: ROS, Docker, Django, OpenCV, Tensorflow, Unity Engine
Languages: English, 中文, 日本語, Français, فارسی

Work and Research Experience

2020 May - Current

Software Engineer - Robotics   Rapyuta Robotics

- Squad Scrum Master and lead developer on the Global World Model, a web server that provides a interface to IO-AMR, a generic ROS based framework compatible with various autonomous robots
- Dockerized, packaged and released IO-AMR robotics software to Hitachi's AI forklift system.
- Currently architecting the new Toyota's autonomous car manufacturing tool delivery robot system

2018 May - 2020 August

Tailsitter Vision/Control Research Thesis (Github)   University of Toronto Institute for Aerospace Studies

- Developed and extended calibration, localization, and navigation software of multi-tailsitter-type drones that docks onto other drones mid-flight in simulation. Used Apriltag bundle detection to obtain relative localization to another tailsitter drone.
  Supervisor: Professor Jonathan Kelly.

2019 Sept - 2019 May

A Walking Acrobot Capstone Project (Github)   University of Toronto System Controls Laboratory

- In a team of 4 built a two legged acrobotic robot controlled with a single brushless DC motor that uses guidance via virtual holonomic constraints involving impacts.
- Succeeded in taking 2.5 steps on the actual built robot and 10+ steps in simulation.
- Won the Gordon Slemon Award ($1000) for excellence in Engineering Design
  Supervisor: Professor Manfredi Maggiore.

2018 Sept - 2019 Sept

Software Engineering Intern - Robotics   Rapyuta Robotics

- Created the simulation of a multi-robot warehouse pick assist system. These autonomous robots coordinate with workers to fulfill orders retrieved from an inventory management system. Used dockerized cloud infrastructure to simulate 30 robots communicating and fulfilling orders on the cloud.
- Worked with the ALICA robot state machine engine, and used Google ORTools to optimize and simulate human movement to find the optimum human movement which reduces human movement time.

Extracurricular Activities and Projects

Engineering Student Groups

2016 Sept -
Current

Founder and Software Lead (Github, Website)   *University of Toronto Soccer Robot Team*

- In 2017, formed a team of 20-30 talented members building a humanoid soccer robot for the Robocup. Our faculty advisors are Prof. Jonathan Kelly and Prof. D'Eleuterio.
- Created a walking engine using trajectory generation, classic control and IMU feedback
- Used OpenCV to detect field lines, used detected fieldlines with AMCL to localize the robot.
- Participated in the 2018 humanoid kid-sized Robocup league in Montreal
- Participated in the 2021 humanoid kid-sized virtual Robocup league

2016 Sept -
2017 May

Team Lead   *Hacker Academy*

- Created the challenge for the DeepHealth Hackathon, University of Toronto's first healthcare and machine learning hackathon. Around 80 graduate and undergraduate students attended the challenge.