

Sean J. Wang

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SKILLS

Programming: Python (PyTorch, Numpy), C++, JavaScript, MATLAB
Robotics/Simulation Tools: ROS, Gazebo, PyBullet, OpenCV
Software & OS: Linux/Ubuntu, Docker, Google Cloud Platform
Expertise: Deep Learning, Path Planning, Control Systems, State Estimation

EDUCATION

Carnegie Mellon University (CMU) Anticipated Defense: Dec. 2023
PhD, Mechanical Engineering
GPA: 4.0
University of California, Santa Barbara (UCSB) June 2018
BS/ MS, Mechanical Engineering
BS Major GPA: 3.97 | MS GPA: 4.0

PHD THESIS

Data-Driven Autonomous Outdoor Rock Crawling Jan. 2020 - Present

- Developed reinforcement learning algorithms to safely drive wheeled robots over rough, obstacle-ridden terrain.
- Trained neural networks for vehicle trajectory prediction using LiDAR-generated maps.
- Integrated stochastic predictions into a planning/control framework, allowing for safe navigation.
- Formulated sim2real algorithms to transferring knowledge learned from PyBullet simulations to the real-world.

RESEARCH & ACADEMIC PROJECTS

Robotic Environmental Sampling - CMU May 2019 - Present

- Built and programmed a robot for soil contamination sensing in remote locations.
- Implemented algorithms for planning optimal measurement locations and navigation.

Contact Localization for Transparent Robots - CMU May 2018 - May 2019

- Formulated a velocity-based method for transparent robots to localize contact.
- Evaluated method on a legged Minitaur robot and in simulation.

ISLA - CMU Jan. 2019 - May 2019

- Designed a bio-inspired quadrupedal robot that rolls for more efficient locomotion.
- Simulated and optimized rolling behavior.

Advanced Imaging Drone - UCSB Aug. 2016 - May 2017

- Engineered pilot awareness and safety systems for locating endangered birds in forest canopies.

Multi-Agent Surveillance Path Planning - UCSB Jan. 2016 - June 2016

- Created complete coverage algorithms for surveillance robot networks operating under sparse communication.

INDUSTRY EXPERIENCE

Piximo Robotics, LLC - Pittsburgh, PA Jan. 2022 - Present
Co-Founder & Chief Technology Officer

- Developed robots that enable remote workers to interact with and deliver care items to elderly in retirement homes.
- Interviewed potential customers to identify product market fit and to inform technology development directions.
- Secured grants and paid pilots to fund prototype development.

Strand Products, Inc - Santa Barbara, CA May 2017 - Aug. 2017
Mechanical Engineer Intern

- Invented machines to automate existing manufacturing processes of cable assemblies.

Continental AG - Santa Barbara, CA May 2016 - Dec. 2016
Mechanical Engineer Intern

- Modeled and fabricated components for a long range LIDAR sensor prototype.

HONORS & AWARDS

TCS Presidential Fellowship Aug. 2018 - July 2019
Tirrell Award for Distinction in Undergraduate Research May 2017
UCSB Junior Design Fair - Most Marketable Product May 2016
1st Place, UCSB Robotics: Design RoboRat Competition May 2015