Charles Sun

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EDUCATION

UNIVERSITY OF CALIFORNIA, BERKELEY

B.A., Computer Science
Aug 2018 - May 2022
Berkeley, CA

GPA: 4.00

COURSEWORK

GRADUATE

Deep Reinforcement Learning
Natural Language Processing

UNDERGRADUATE

Machine Learning
Probability & Random Processes
Convex Optimization
Algorithms
Computer Security
Computer Graphics
Discrete Math and Probability
Computer Architecture
Data Structures

SKILLS

LANGUAGES

Python
C++
Java
C

FRAMEWORKS

TensorFlow
PyTorch
NumPy
PyBullet

TECHNOLOGY

Arduino
ROS
Docker
Linux
LaTeX
Git
Blender
Unity
Unreal Engine
CAD

EXPERIENCE

BERKELEY AI RESEARCH LAB (BAIR) | Undergraduate Researcher

February 2020 - Present | Berkeley, CA

- Supervised by Professor Sergey Levine.
- Working on state-of-the-art research on reinforcement learning, robotics, and machine learning, particularly in vision-based settings for robotic systems.
- Researching how mobile manipulators can autonomously learn skills that require a combination of navigation and grasping.
- Developed ReLMM, a mobile manipulation system that can learn continuously on a real-world platform without any environment instrumentation, with minimal human intervention, and without access to privileged information, such as maps, objects positions, or a global view of the environment.

UC BERKELEY | Teaching Assistant

August 2019 - Present | Berkeley, CA

- TA for EECS 126 Probability & Random Processes (Spring 2021).
- Responsible for leading weekly office hours, creating weekly discussion worksheets, and answering student questions on Piazza.
- Previously TA for CS 170 Efficient Algorithms (Fall 2020) and CS 61A Structure and Interpretation of Computer Programs (Fall 2019, Spring 2020).

SKYCURRENT | Software Engineering Intern

June 2019 - August 2019 | Oakland, CA

- Worked for a startup building skyscraper window cleaning robots.
- Designed and developed the software infrastructure of the main control system.
- Collaborated directly with the mechanical and electrical team to develop interface between software and hardware.
- Refactored existing codebase for modularity and readability, speeding up workflow.
- Reduced robot automated window cleaning time from ~2 months to ~1 day.

ROBOTICS AT BERKELEY PROJECT TEAM | Lead Systems Engineer

February 2019 - June 2019 | Berkeley, CA

- Led team of students in the creation of a cubic rolling-by-flipping robot.
- Designed and built the electrical system of the flipping mechanic using a flywheel.
- Implemented software control using Arduino to enable robot movement.

PUBLICATIONS

- Charles Sun*, Coline Devin*, Brian Yang, Jędrzej Orbik, Ahbishek Gupta, Glen Berseth, Sergey Levine. "ReLMM: Practical RL for Learning Mobile Manipulation Skills using Only Onboard Sensors." *Under review as a conference paper at RSS 2021*.

PROJECTS

DEEP REINFORCEMENT LEARNING LIBRARY

August 2019 - February 2020

- PyTorch implementations of fundamental deep reinforcement learning algorithms including Q-Learning, Policy Gradient, GAE, PPO, DDPG, and TD3.

VOXEL GAME

March 2017 - April 2018

- Video game with procedurally generated infinite world consisting of cubes, developed in UE4 and C++.