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

* denotes in progress, Fall 2020

GRADUATE

Deep Reinforcement Learning*

UNDERGRADUATE

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

SKILLS

LANGUAGES

Python
C++
Java
C

FRAMEWORKS

TensorFlow
PyTorch
NumPy
PyBullet

TECHNOLOGY

Arduino
ROS
Linux
LaTeX
Git
Blender
CAD

RESEARCH

ROBOTIC AI & LEARNING LAB (RAIL) | Undergraduate Researcher

February 2020 - Present | Berkeley, CA

- Advised by **Coline Devin**, **Glen Berseth**, and **Sergey Levine**.
- Interested in reinforcement learning, robotics, game playing, deep learning, and artificial intelligence, particularly in sample-efficient learning in vision-based settings for robotic systems.

"Reset-Free Autonomous Practicing of Mobile Manipulation Skills"

- We investigate how mobile manipulation platforms can use mobility as a tool to set up a variety of practice problems for manipulation, enabling robust learning.
- Current work with **Coline Devin**, **Glen Berseth**, **Ahbishek Gupta**, and **Sergey Levine**.

EXPERIENCE

SKYCURRENT | Software Engineering Intern

June 2019 - August 2019 | Oakland, CA

- Worked on software team developing window cleaning robots for skyscrapers.
- Led design and development of software control system for manual and automated operations, reducing window cleaning time from 2 months to 1 day.
- Developed interface with touchscreen, sensors, and motors with hardware team.
- Refactored existing codebase for modularity and readability, speeding up workflow.

ROBOTICS AT BERKELEY PROJECT TEAM | Lead Systems Engineer

June 2019 - August 2019 | Oakland, CA

- Led team with creation of cubic "rolling" robot.
- Designed the software and electrical system of the rolling mechanic using a flywheel.

TEACHING

UC BERKELEY EECS | TEACHING ASSISTANT

CS 170 Efficient Algorithms and Intractable Problems

August 2020 - Present | Berkeley, CA

- Creating high-quality class videos for online learning and holding weekly remote office hours to help students with concepts and homework.

CS 61A The Structure and Interpretation of Computer Programs

August 2019 - May 2020 | Berkeley, CA

- Lead weekly lab and discussion section of 30 students and held weekly office hours to help students with concepts, homework, and labs.

PROJECTS

FUNDAMENTAL DEEP RL 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++.