(925) 998-1189
charlesjsun@berkeley.edu

Charles Sun

GitHub: charlesjsun
LinkedIn: charlesjsun
Website: charlesjsun.github.io

EDUCATION

M.S. in Electrical Engineering and Computer Science, *University of California, Berkeley* — August 2022 — May 2023
B.A. in Computer Science, *University of California, Berkeley* — August 2018 — May 2022

GPA: 4.0/4.0

Teaching Assistant: Intro to CS (CS 61A) Fa19 & Sp20, Algorithms (CS 170) Fa20, Probability (EECS 126) Sp21

Courseworks: Machine Learning, NLP, Computer Vision, Data Structures, Algorithms, Operating Systems, Computer Security, Deep Reinforcement Learning, Computer Graphics

WORK EXPERIENCE

Anyscale — June 2022 — August 2022
Software Engineering Intern — *San Francisco, CA*
- Worked on Ray RLlib developing an open source, production level, distributed reinforcement-learning library.
- Implemented Decision Transformer algorithm for RLlib which uses GPT transformers for offline RL.
- Contributed to open source with clear documentation and extensive CI tests.
- Help refactor algorithms API to be easier to use for users.

Aeva — May 2021 — August 2021
Software Engineering Intern — *Mountain View, CA*
- Worked on the perception team at lidar company.
- Researched SotA point cloud semantic segmentation algorithms and wrote documentation for production engineers.
- Implemented GPU accelerated inference pipeline using C++, CUDA, and TensorRT, which is used in production.

Berkeley AI Research (BAIR) — February 2020 — Present
Researcher — *Berkeley, CA*
- Supervised by Professor Sergey Levine.
- Working on reinforcement learning, NLP, robotics, and machine learning.
- Currently researching the intersection of NLP and RL for interactive language systems (e.g. chat bots).

SkyCurrent — June 2019 — August 2019
Software Engineering Intern — *Oakland, CA*
- Worked for a startup building skyscraper window cleaning robots.
- Designed and developed the software of the main control system with mechanical and electrical team.

PUBLICATIONS

[1] **Charles Sun***, Jędrzej Orbik*, Coline Devin, Brian Yang, Abhishek Gupta, Glen Berseth, and Sergey Levine. "Fully Autonomous Real-World Reinforcement Learning with Applications to Mobile Manipulation." In *5th Conference on Robot Learning (CoRL), 2021*.

Summary: We propose a reinforcement learning system that can learn mobile manipulation tasks continuously in the real world without any environment instrumentation, without human intervention, and without access to privileged information, such as maps, objects positions, or a global view of the environment.

PERSONAL PROJECTS

RJAX [link] — *Python, JAX, Flax, RL, ML*
A reinforcement learning framework written in JAX (Flax) that supports easy distributed multi-device (GPT/TPU) training and experiment management and logging. Currently used for my research.

Voxel Game [link] — *C++, UE4, Graphics*
Voxel based game created in Unreal Engine 4 with procedural generation.

SKILLS

Programming Languages	Python, C++, C, Java
Frameworks	JAX, Flax, PyTorch, NumPy, Tensorflow, OpenGL
Technology	Docker, GCP, Azure, Git, Unity, GPU, TPU, TensorRT, Linux