Gaoyue (Kathy) Zhou

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Education

Carnegie Mellon University — Fall 2021 – Summer 2023 (Expected)
Master of Science in Robotics (MSR) — Cumulative GPA: **4.0/4.0**

University of California, Berkeley — Aug 2017 – May 2021
B.A., Computer Science & Applied Mathematics — Cumulative GPA: **3.94/4.0**
Minor, Physics — Dean's List Honors for all semesters

Publications

A. Singh*, H. Liu*, **G. Zhou**, A. Yu, N. Rhinehart, S. Levine, Parrot: Data-Driven Behavioral Priors for Reinforcement Learning. Accepted for oral presentation (1.8% of submissions) at the International Conference on Learning Representations (ICLR), 2021 arXiv OpenReview

C. H. Séquin, T. Chen, X. Han, N. Jaladanki, **G. Zhou**, Modeling Eva Hild's Sculpture "Wholly", Draft for an EECS Tech Report, EECS Computer Science, University of California, Berkeley

Research

Deceptive Language Detection Through the Game of Mafia
Berkeley NLP — June 2021 – Present
Mentored by Prof. John DeNero and Ph.D. student Samee Ibraheem

- We aim to detect deceptive language by analyzing players' speech in the game of Mafia.
- Devised a way to identify deceptive roles in the game via fine-tuning BERT by combing language features and other utterance patterns, achieving a validation accuracy of 75%.

Parrot: Data-Driven Behavioral Priors for Reinforcement Learning
Robotic AI and Learning Lab (RAIL) — Jan 2020 – March 2020
Mentored by Prof. Sergey Levine, Nick Rhinehart, and Ph.D. student Avi Singh

- We proposed a method for pre-training a behavioral prior for reinforcement learning using data from a diverse range of tasks, and used this behavioral prior to speed up learning of new tasks.
- Implemented and selected flow-based models for the behavioral prior, and then ran RL experiments including SAC on top of this prior.
- The paper was accepted for oral presentation at ICLR 2021; our work was also accepted to NeurIPS 2020 Workshop on Robot Learning, Deep Reinforcement Learning, and Challenges of Real World Reinforcement Learning.

Probabilistic Embeddings for Actor-critic RL (PEARL), *RAIL* — May 2019 – Dec 2019
Mentored by Prof. Sergey Levine, Prof. Chelsea Finn, and Ph.D. student Kate Rakelly

- Extended the PEARL algorithm to work with high-dimensional image observations.
- Demonstrated that different forms of supervision, e.g. goal state information, robot experience, etc, can be combined during training which reduced the reliance on fine-tuned reward functions.

Computer Graphics Research, *UC Berkeley Department of EECS* — Aug 2017 – Jan 2019
Supervised by Prof. Carlo H. Séquin in exploring various CAD tools for the procedural generation of 2-manifold sculpture geometries

- Explored different ways of modeling Eva Hild and Charles O. Perry's sculptures.
- Designed and modeled sculptures of various topological structures using Autodesk Maya.
- Contributed to the implementation of Non-Orientable Manifold Editor (NOME), a newly developed CAD tool written in C++, and deployed it in our modeling process.

Experience

Software Engineering Intern, *Microsoft Bing*, Bellevue, WA July 2021 – Aug 2021

- Designed and built an intelligent traffic splitter via random forests and ANN that serves as a front door service benefiting millions of customers of Microsoft Ads.
- Distilled and analyzed raw user data from Cosmos DB and extracted relevant features affecting users' behavior using Microsoft Substrate and PySpark.
- Achieved 6% increase in KPI and presented work to the Microsoft Advertising Platform team.

Software Engineering Intern, *Microsoft*, San Francisco, CA May 2020 – Aug 2020

- Worked on *Lobe*, a deep learning app that builds, trains, and ships custom models via a GUI.
- Built iOS and Android apps that report predictions in real-time using models trained via Lobe.
- Developed a tracking app that stores and displays prediction statistics using React and SQLite.
- Made a tech report on iOS and Android development and presented it to the Office of the CTO.

Artificial Intelligence Engineer Intern, *IPMD, Inc.*, Berkeley, CA Jan 2019 – Jan 2020

- Worked on *Project M*, an AI platform classifying human emotions based on micro expressions.
- Built a Restful API that serves to handle user-uploaded images and returns prediction results.
- Designed and implemented an algorithm of integrating labels returned by the emotion classifier with the actual images that speed up the process by 20x.

Selected Awards

Microsoft Tuition Scholarship	2019
Dean's List Honors	2017, 2018, 2019, 2020, 2021
Runner-Up in Asian Regional Space Settlement Design Competition	2016

Teaching

Machine Learning (CS 189) Fall 2020
Teaching Assistant
Developed materials, taught sections, hold online homework parties, debug homework and exams

Designing Information Devices and Systems (EECS 16B) Fall 2019, Spring 2020, Spring 2021
Teaching Assistant
Taught weekly discussion sections, held office hours, prepared exams and worksheets

Selected Coursework

CS 188: Artificial Intelligence
CS 189: Machine Learning
CS 194: Full Stack Deep Learning
CS 288: Natural Language Processing
CS 170: Algorithms and Intractable Problems
CS 184: Computer Graphics
CS 161: Computer Security
CS 162: Operating Systems
EECS 126: Probability and Random Processes
EECS 127: Optimization Models
Physics C191: Quantum Computing
Physics 137A & B: Quantum Mechanics
Math 113 & 114: Abstract Algebra
Math 104: Real Analysis
Math 185: Complex Analysis
Math 128A: Numerical Analysis

Society Memberships

Berkeley Engineers and Mentors (BEAM)
Upsilon Pi Epsilon (CS Honors Society)