

# Justin Fu

justinjf@gmail.com • +1 (734) 972-9418

## EDUCATION

**University of California, Berkeley**, Berkeley, California, USA

Doctor of Philosophy (Ph.D.) in EECS

Aug 2016 – Aug 2021

- Areas: Deep Learning, Reinforcement Learning, Natural Language Processing
- GPA: 3.89/4.00
- Research Advisor: Professor Sergey Levine

**University of California, Berkeley**, Berkeley, California, USA

Bachelor of Science (B.S.) in EECS

Aug 2011 – May 2015

- Graduated with Highest Honors in EECS.
- Member of HKN (EECS Honor Society)
- GPA: 3.97 / 4.00
- Research Advisor: Professor Pieter Abbeel

## WORK EXPERIENCE

**Waymo**, Mountain View, CA, USA

Research Scientist

Aug 2021 – Current

- Lead developer for Waymax – an open-source, hardware-accelerated simulator for planning and behavior problems in autonomous driving (<https://github.com/waymo-research/waymax>).
- Working on combining search/reinforcement learning with foundation models for autonomous driving. Worked on multi-agent, RL-finetuning of foundation models, and combining RL with imitation learning for improving behavior in safety-critical scenarios.

**DeepMind**, London, UK

Research Intern

Sep 2019 – Jan 2020

- Developed algorithms for inferring objectives in multi-agent games using inverse reinforcement learning. This work was accepted for publication in the Journal of Artificial Intelligence Research (JAIR).

**Google**, Mountain View, California, USA

Student Researcher / Research Intern

Jun 2018 – Aug 2019

- Developed algorithms for language-based human-computer interfaces by inferring objective functions from language commands using inverse reinforcement learning - this work was accepted to ICLR 2019.

## PUBLICATIONS AND PREPRINTS

C. Gulino\*, **J. Fu\***, W. Luo\*, G. Tucker\*, E. Bronstein, Y. Lu, J. Harb, X. Pan, Y. Wang, X. Chen, J. Co-Reyes, et. al., “Waymax: An Accelerated, Data-Driven Simulator for Large-Scale Autonomous Driving Research,” *Advances in Neural Information Processing Systems – Dataset Track (NeurIPS)*, In Submission. May 2023.

Y. Lu, **J. Fu**, G. Tucker, X. Pan, E. Bronstein, R. Roelofs, B. Sapp, B. White, A. Faust, S. Whiteson, D. Anguelov, S. Levine, “Imitation Is Not Enough: Robustifying Imitation with Reinforcement Learning for Challenging Driving Scenarios,” *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, In Submission. Mar 2023.

C. Snell, M. Yang, **J. Fu**, Y. Su, S. Levine, “Context-aware Language Modeling for Goal-Oriented Dialogue Systems,” *Findings of the Association for Computational Linguistics: NAACL* Jul 2022.

S. Verma, **J. Fu**, M. Yang, S. Levine, “CHAI: A Chatbot AI for Task-oriented Dialogue with Offline Reinforcement Learning,” *North American Chapter of the Association for Computational Linguistics (NAACL)* Jul 2022.

**Oral presentation.**

**J. Fu**, A. Tachetti, J. Perolat, Y. Bachrach, “Evaluating Strategic Structures in Multi-Agent Inverse Reinforcement Learning”, *Journal of Artificial Intelligence Research (JAIR)* Aug 2021.

**J. Fu**, S. Levine, “Offline Model-based Optimization via Normalized Maximum Likelihood Estimation,” *International Conference on Learning Representations (ICLR)* May 2021.

**J. Fu\***, M. Norouzi\*, O. Nachum\*, G. Tucker\*, Z. Wang, A. Novikov, M. Yang, M. Zhang, Y. Chen, A. Kumar, C. Paduraru, S. Levine, T. Paine\*, “Benchmarks for Deep Off-Policy Evaluation”, *International Conference on Learning Representations (ICLR)* May 2021.

D. Ghosh, A. Gupta, A. Reddy, **J. Fu**, C. Devin, B. Eysenbach, S. Levine, “Learning to reach goals without reinforcement learning”, *International Conference on Learning Representations (ICLR)* May 2021.

**J. Fu**, A. Kumar, O. Nachum, G. Tucker, S. Levine, “D4RL: Datasets for Deep Data-driven Reinforcement Learning”, *arXiv preprint arXiv:2004.07219* Apr 2020.

M. Janner, **J. Fu**, M. Zhang, S. Levine, “When to Trust Your Model: Model-based Policy Optimization”, *Advances in Neural Information Processing Systems (NeurIPS)* Dec 2019.

A. Kumar\*, **J. Fu\***, G. Tucker, S. Levine, “Stabilizing Off-Policy Q-Learning via Bootstrapping Error Reduction”, *Advances in Neural Information Processing Systems (NeurIPS)* Dec 2019.

**J. Fu**, A. Korattikara, S. Levine, S. Guadarrama, “From Language to Goals: Inverse Reinforcement Learning for Vision-Based Instruction Following”, *International Conference on Learning Representations (ICLR)* Sep 2019.

**J. Fu\***, A. Kumar\*, M. Soh, S. Levine, “Diagnosing Bottlenecks in Deep Q-learning Algorithms”, *International Conference on Machine Learning (ICML)* Jun 2019.

**J. Fu\***, A. Singh\*, D. Ghosh, L. Wang, S. Levine, “Variational Inverse Control with Events: A General Framework for Data-Driven Reward Definition”, *Advances in Neural Information Processing Systems (NeurIPS)* Dec 2018.

**J. Fu**, K. Luo, S. Levine, “Learning Robust Rewards with Adversarial Inverse Reinforcement Learning”, *International Conference on Learning Representations (ICLR)* Apr 2018.

**J. Fu\***, J.D. Co-Reyes\*, S. Levine, “*EX*<sup>2</sup>: Exploration with Exemplar Models for Deep Reinforcement Learning”, *Advances in Neural Information Processing Systems (NeurIPS)* Dec 2017.

**Spotlight presentation.**

C. Finn, K. Yu, **J. Fu**, S. Levine, and P. Abbeel, “Generalizing Skills with Semi-Supervised Reinforcement Learning”, *International Conference on Learning Representations (ICLR)* Apr 2017.

**J. Fu**, S. Levine, and P. Abbeel, “One-Shot Learning of Manipulation Skills with Online Dynamics Adaptation and Neural Network Priors”, *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Oct 2016.

## PROFESSIONAL SERVICE

**Co-Organizer**, NeurIPS 2021 Workshop on Offline Reinforcement Learning  
**Co-Organizer**, ICML 2019 Workshop on Imitation, Intent, and Interaction (I3)  
**Reviewer**, Advances in Neural Information Processing Systems (NeurIPS) 2018-2022  
**Reviewer**, International Conference on Machine Learning (ICML) 2019, 2020, 2021, 2023  
**Reviewer**, IEEE Conference on Robotics and Automation (ICRA) 2019, 2021  
**Reviewer**, International Conference on Learning Representations (ICLR) 2019, 2020, 2024

## TEACHING EXPERIENCE

<b>CS188</b> (Introduction to Artificial Intelligence)	
UC Berkeley	Jan 2018 – May 2018
Teaching Assistant	Jun 2020 – Aug 2020
<b>CS221</b> (Artificial Intelligence: Principles & Techniques)	
Stanford University	
Teaching Assistant	Sep 2015 – Dec 2015
<b>CS61C</b> (Great Ideas in Computer Architecture)	
University of California, Berkeley	
Teaching Assistant	Jun 2013 – Aug 2013

**OUTREACH**

BAIR AI4ALL Summer Camp  
Co-organizer  
Project Mentor

Aug 2018  
Jul 2017