Justin Fu

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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).
- Worked on multi-agent, RL-finetuning of foundation models, achieving an 6% improvement on the WOSAC benchmark over Waymo's best internal models.
- Working on combining foundation models for autonomous driving with search/optimization to guarantee reliability and safety of system outputs.

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, Calfornia, 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 Adverserial Inverse Reinforcement Learning", *International Conference on Learning Representations (ICLR)* Apr 2018.

J. Fu*, J.D. Co-Reyes*, S. Levine, "EX^2: 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	**CS188** (Introduction to Artificial Intelligence) UC Berkeley Teaching Assistant	Jan 2018 – May 2018 Jun 2020 – Aug 2020
	CS221 (Artificial Intelligence: Principles & Techniques) Stanford University Teaching Assistant	Sep 2015 – Dec 2015
	CS61C (Great Ideas in Computer Architecture) University of California, Berkeley Teaching Assistant	Jun 2013 – Aug 2013

OUTREACH   BAIR AI4ALL Summer Camp
                              Co-organizer   Aug 2018
                              Project Mentor   Jul 2017