Laura Smith

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OBJECTIVE

My goal is to develop robot systems that learn from real-world experience to enable deployment in truly unstructured real-world situations.

EDUCATION

Ph.D. Student in Computer Science 8/20 – 5/25
University of California, Berkeley GPA: 3.947/4.00

B.A. in Computer Science 2016 – 2020
University of California, Berkeley GPA: 3.967/4.00
Highest Distinction in General Scholarship

Relevant Coursework: Deep Reinforcement Learning (A+), Deep Unsupervised Learning (A+), Information Theory & Coding (A-), Convex Optimization* (A), Optimization & Approximation (A+), Machine Learning (A+), Machine Learning Systems (A+), Linear System Theory (A), Real Analysis (A), Artificial Intelligence (A+), Probability & Random Processes (A), Discrete Math & Probability Theory (A+)*

AWARDS

Fellowships

- *Google PhD Fellowship*, current
- *National Science Foundation Graduate Research Fellowship*, 2020-2023
- *EECS Excellence Award*, supplementary fellowship for outstanding academic record, UC Berkeley, 2020-2021

Honors

- *CRA Outstanding Undergraduate Researcher Award Finalist*, awarded to roughly 20 graduating seniors in computer science from North America, 2019
- *NeurIPS Robot Learning Workshop Travel Award*, DeepMind, 2019
- *Upsilon Pi Epsilon CS Honors Society*, UC Berkeley, 2018
- *The Leadership Award*, Cal Alumni Association, 2016, 2017, 2019

INDUSTRY EXPERIENCE

Research Intern October 2024 – present
Physical Intelligence, advised by Chelsea Finn
Working on improving the performance of robot foundation models.

Student Researcher March 2024 – October 2024
Google DeepMind Robotics, advised by Ted Xiao and Alex Irpan
Worked on improving the flexibility of robot foundation models through dense language grounding and submitted 2 papers to a robotics conference.

ACADEMIC RESEARCH

Graduate Student Researcher August 2020 – present
Robotics and AI Lab (RAIL), advised by Sergey Levine
Developing intelligent, autonomous systems that learn continually in the real world.

Undergraduate Researcher May 2018 – May 2020
Robot Learning Lab (RLL), advised by Pieter Abbeel
Developed sample-efficient, vision-based methods, via representation learning and model-based approaches, to enable robot learning in real-world domains.

PUBLICATIONS

Laura Smith, Alex Irpan, Montserrat Gonzalez Arenas, Sean Kirmani, Dmitry Kalashnikov, Dhruv Shah, Ted Xiao. STEER: Flexible Robotic Manipulation via Dense Language Grounding. *published as an oral presentation at the CoRL Workshop on Mastering Robot Manipulation in a World of Abundant Data, currently in submission for conference presentation.* [website]

Soroush Nasiriany, Sean Kirmani, Tianli Ding, **Laura Smith**, Yuke Zhu, Danny Driess, Dorsa Sadigh, Ted Xiao. RT-Affordance: Affordances are Versatile Intermediate Representations for Robot Manipulation. *published at the CoRL Workshop on Mastering Robot Manipulation in a World of Abundant Data, currently in submission for conference presentation.* [website]

Xiaoyu Huang, Qiayuan Liao, Yiming Ni, Zhongyu Li, **Laura Smith**, Sergey Levine, Xue Bin Peng, Koushil Sreenath. HiLMa-Res: A General Hierarchical Framework via Residual RL for Combining Quadrupedal Locomotion and Manipulation. *published at IROS 2024.*

Laura Smith*, Yunhao Cao*, Sergey Levine. Grow Your Limits: Continuous Improvement with Real-World RL for Robotic Locomotion. *published at ICRA, 2024.* [website]

Laura Smith, J. Chase Kew, Tianyu Li, Xue Bin Peng, Sehoon Ha, Jie Tan, Sergey Levine. Learning and Adapting Agile Locomotion Skills by Transferring Experience. *published at RSS, 2023.* [website]

Laura Smith*, Ilya Kostrikov*, Sergey Levine. Demonstrating a Walk in the Park: Learning to Walk in 20 Minutes With Model-Free Reinforcement Learning. *published at Robotics Science and Systems (RSS) Demo Track, 2023.* [website]

Kevin Zakka, Philipp Wu, **Laura Smith**, Nimrod Gileadi, Taylor Howell, Xue Bin Peng, Sumeet Singh, Yuval Tassa, Pete Florence, Andy Zeng, Pieter Abbeel. RoboPianist: Dexterous Piano Playing with Deep RL. *published at CoRL, 2023.* [website]

Philip J. Ball*, **Laura Smith***, Ilya Kostrikov*, Sergey Levine. Efficient Online Reinforcement Learning with Offline Data. *published at ICML, 2023.* [arXiv]

Laura Smith, J. Chase Kew, Xue Bin Peng, Sehoon Ha, Jie Tan, Sergey Levine. Legged Robots that Keep on Learning: Fine-Tuning Locomotion Policies in the Real World. *published at ICRA, 2022.* [website]

Vitchyr H. Pong, Ashvin Nair, **Laura Smith**, Catherine Huang, Sergey Levine. Offline Meta-RL with Online Self-Supervision. *published at ICML, 2022.* [website]

Kimin Lee, **Laura Smith**, Anca Dragan, Pieter Abbeel. B-Pref: Benchmarking Preference-Based Reinforcement Learning. *published at NeurIPS 2021, Datasets and Benchmarks Track.* [website]

Laura Smith*, Kimin Lee*, Pieter Abbeel. PEBBLE: Feedback-Efficient Interactive RL via Relabeling Experience and Unsupervised Pre-Training. *published at ICML 2021 as a* ***long oral presentation (166/5513=3.0%)***. [website]

Laura Smith, Nikita Dhawan, Marvin Zhang, Pieter Abbeel, Sergey Levine. AVID: Learning Multi-Stage Tasks via Pixel-Level Translation of Human Videos. *published at RSS, 2020.* [website]

Marvin Zhang*, Sharad Vikram*, **Laura Smith**, Pieter Abbeel, Matthew Johnson, Sergey Levine. SOLAR: Deep Structured Latent Representations for Model-Based Reinforcement Learning. *published at ICML, 2019.* [website]

PREPRINTS

Annie Chen*, Alec Lessing*, Andy Tang*, Govind Chada*, **Laura Smith**, Sergey Levine, Chelsea Finn. Commonsense Reasoning for Legged Robot Adaptation with VLMs. *in submission.* [website]

Annie Chen*, Govind Chada*, **Laura Smith**, Archit Sharma, Zipeng Fu, Sergey Levine, Chelsea Finn. Adapt On-the-Go: Behavior Modulation for Single-Life Robot Deployment. *in submission.* [website]

Seungeun Rho, **Laura Smith**, Tianyu Li, Sergey Levine, Xue Bin Peng, Sehoon Ha. Language Guided Skill Discovery. *in submission.*

Press Coverage

- Robot dog learns to walk on tough terrain in just 20 minutes, by Alex Wilkins. New Scientist. 26 August 2022.
- A technique that allows legged robots to continuously learn from their environment, by Ingrid Fadelli. Tech Xplore. 1 November 2021.
- AVID: a framework to enhance imitation learning in robot, by Ingrid Fadelli. Tech Xplore. 3 January 2020.
- Researchers develop new framework to teach robots, by David Curry. RTInsights. 13 January 2020.

PROFESSIONAL ACTIVITIES

Talks

- BAIR Robotics & Systems Workshop 2022
- Google-BAIR Commons Symposium 2021, 2022

Reviewing

- IEEE Robotics and Automation Letters (RA-L) 2023
- Conference on Neural Information Processing Systems (NeurIPS) 2022
  Benchmarks and Datasets Track
- International Conference on Intelligent Robots and Systems (IROS) 2020, 2022
- International Conference on Robotics and Automation 2022
- International Conference on Learning Representations (ICLR) 2022
  Generalizable Policy Learning in Physical World Workshop

Advising

- Yiming Ni (MS at Stanford)
- Yunhao Cao
- Stefanie Gschwind
- Jennifer Zhao
- Hrish Leen
- Seungeun Rho (PhD Student at Georgia Tech)
- Hongbo Zhang (PhD Student at Chinese University of Hong Kong)

SERVICE & OUTREACH

AI Research Mentoring Program, Co-Organizer 2020 – present
Coordinating a mentoring program for underrepresented undergraduates to learn about AI research from graduate student volunteers.

UC Berkeley Women in EECS, Board Member 2022 – 2023
Organizing events for female graduate students in computer science and engineering.

Robot Learning Lab Outreach, Co-Organizer 2018 – 2020
Organized lab tours and assisted with demonstrations at large-scale events.

Upsilon Pi Epsilon, Service Committee Member 2018
Held weekly open office hours for lower-division, undergraduate CS courses.

TEACHING

Student Instructor

- *CS 189/289A: Introduction to Machine Learning* Spring 2020
- *CS 287: Advanced Robotics* Fall 2019
- *CS 188: Introduction to Artificial Intelligence* Fall 2018, Spring 2019

Course Staff (Reader, Tutor, Lab Assistant)

- *CS 70: Discrete Mathematics & Probability Theory* Spring 2018
- *CS C8: Data Science* Fall 2017
- *CS 61B: Data Structures & Algorithms* Spring 2016

Lectures

- *Imitation Learning*, CS 287: Advanced Robotics, UC Berkeley Fall 2019
- *Robotics Talk*, for CS Education Day Winter 2018
- *Artificial Intelligence (Special Topics)*, CS 10, UC Berkeley Fall 2018