Laura Smith

Berkeley, CA

smithlaura@berkeley.edu
github.com/lauramsmith
lauramsmith.github.io

Education

University of California, Berkeley, Berkeley CA — 2016 – present
B.A. Computer Science — GPA: 3.963/4.00
Technical Coursework: Deep Reinforcement Learning, Artificial Intelligence, Machine Learning, Operating Systems & System Programming, Convex Optimization, Real Analysis, Probability & Random Processes, Discrete Math & Probability, Web Architecture, Computer Architecture, Data Science, Data Structures & Algorithms, Statistics

Experience

Undergraduate Student Researcher — May 2018 – present
Robot Learning Lab (RLL), Advised by Prof. Pieter Abbeel

- Worked on developing representation learning and model-based reinforcement learning methods to allow robots to learn complex skills for deployment in real-world systems.
- Involved in outreach including invited lectures on Artificial Intelligence for UC Berkeley's CS 10 as well as for its annual CS Education Day for high school students.

Undergraduate Student Instructor — Fall 2018 - present
Advanced Robotics (CS 287), Introduction to Artificial Intelligence (CS 188)

- Introduced students to a breadth of ideas at the core of Artificial Intelligence. Topics include search, games, reinforcement learning, constraint satisfaction problems, bayesian networks, and machine learning.
- Held weekly sections and office hours, engaging with students on and offline along with handling exam logistics.

Course Reader & Tutor — Fall 2017, Spring 2018
Data Science (CS C8), Discrete Math & Probability (CS 70)

- (*CS C8*) Covered concepts in programming and statistical inference in conjunction with analyses of real-world datasets and ethical considerations. Held small-group tutoring sections and facilitated office hours.
- (*CS 70*) Helped students in one-on-one setting with formalizing logic, proofs, graph theory, and probability.

Publications

Laura Smith, Nikita Dhawan, Marvin Zhang, Pieter Abbeel, Sergey Levine.
AVID: Learning Multi-Stage Tasks via Pixel-Level Translation of Human Videos.
NeurIPS Deep Reinforcement Learning Workshop, 2019, NeurIPS Learning from Rich Experience Workshop, 2019, in submission to *International Conference on Robotics and Automation (ICRA)*, 2020

Marvin Zhang*, Sharad Vikram*, **Laura Smith**, Pieter Abbeel, Matthew Johnson, Sergey Levine.
SOLAR: Deep Structured Latent Representations for Model-Based Reinforcement Learning.
in *International Conference on Machine Learning (ICML)*, 2019

Independent Projects

Unsupervised Learning of Object-Centric Representations for Vision-Based Planning

- Incorporated the notion of physical priors to enable learning dynamics generalizable to environments in which the same physical properties hold as seen in training and to perform physics-aware planning.
- Derived graphical model structure and resulting variational objective to learn a sparse representation of high-dimensional input to handle arbitrarily many objects of few classes. This sparse representation is coupled with modular dynamics models for sensible planning.

Unbiased News Generation

- Wrote a program which aims to remove bias from news reports, motivated by the prevalent fake-news problem.
- Given a user's query, performed sentiment analysis on related, as determined by unsupervised clustering, articles taken from 5 major outlets. Averaged over emotionally-charged statements to return an 'unbiased' article stitched together using a sequence-to-sequence model for meaningful language.