Dhruv Sreenivas

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EDUCATION

Cornell University — Ithaca, NY
M.S. Computer Science — Aug 2021 - May 2023
GPA: 4.30/4.0 — Advisors: Wen Sun, Robert Kleinberg

B.S. Computer Science, Mathematics — Aug 2018 - May 2021
GPA: 3.66/4.0

PUBLICATIONS

3. ***Adversarial Imitation Learning via Boosting***
   Jonathan Chang, **Dhruv Sreenivas**, Yingbing Huang, Kianté Brantley, Wen Sun
   Submitted to NeurIPS 2023

2. ***Deep Multi-Modal Structural Equations For Causal Effect Estimation With Unstructured Proxies***
   Shachi Deshpande, Kaiwen Wang, **Dhruv Sreenivas**, Zheng Li, Volodymyr Kuleshov
   NeurIPS 2022

1. ***Mitigating Covariate Shift in Imitation Learning via Offline Data Without Great Coverage***
   Jonathan Chang, Masatoshi Uehara, **Dhruv Sreenivas**, Rahul Kidambi, Wen Sun
   NeurIPS 2021

RESEARCH EXPERIENCE

Apple MLR — Cupertino, CA
Research Intern — May 2022 – Sep 2022
- Clustering for offline skill learning research, advised by Walter Talbott, Josh Susskind, Alexander Toshev, & Devon Hjelm
- Concurrently studied representations that matter for reinforcement learning with Riashat Islam & Devon Hjelm

Mila - Quebec AI Institute — Montreal, QC (remote)
Research Collaborator — Apr 2021 – Mar 2022
- Reinforcement learning research for the LambdaZero project, looked into ways to stabilize exploratory algorithms in the drug discovery setting using epistemic uncertainty estimation advised by Doina Precup & Yoshua Bengio

Cornell University - Prof. Wen Sun — Ithaca, NY
Undergraduate/Graduate Researcher — Sep 2020 – Present
- **Fall 2020:** Joint representation learning in imitation learning settings with high-dimensional state spaces
- **Spring 2021:** Model-based offline imitation learning
- **Fall 2021/Spring 2022:** More representation learning in the IL setting, specifically for visual control, IL in computer graphics applications (helping another student on his MS thesis)
- **Fall 2022/Spring 2023:** Assisting on making Discriminator Actor-Critic more principled via gradient boosting methods
- **Summer 2023:** Leading projects on self-predictive learning for RL in the image-based control context, as well as offline RLHF with a priori human labels given to the agent, where the human is not queryable during training. Assisting another student on a project focusing on using initial policy roll-ins to train diffusion models with RL

Cornell University - Prof. Claire Cardie — Ithaca, NY
Undergraduate Researcher — Feb 2020 – Apr 2020
- Developed sequence-to-sequence BERT-based neural network models in PyTorch to determine most impactful features of good arguments (experience ended early due to COVID-19)

INDUSTRY EXPERIENCE

Amazon Web Services — Boston, MA
Software Development Engineer Intern — Jun 2021 – Aug 2021
- Worked on AWS Boost team, aggregating seller data and developing a performance metric to rank sellers on the platform
- Developed a UI for sellers to see how well they're doing

Cornell Cup Robotics Ithaca, NY
Machine Learning Team Member Oct 2020 – May 2021
- Used Haystack API from DeepSet AI to develop scalable chatbot Q/A system for R2D2-like robot
- Offloaded all heavy-compute machine learning systems for Chatbot onto AWS server to ease workload for main machine

Polici Ithaca, NY (remote)
Machine Learning Intern Jun 2020 – Aug 2020
- Worked to summarize research articles using simple machine learning, deep learning, and NLP techniques
- Utilized SciKit-Learn and TensorFlow neural network models combined with Hidden Markov models for best results

VMware Inc. Palo Alto, CA (remote)
Data Science Intern Jun 2020 – Aug 2020
- Did data analysis comparing scores from a VMware risk engine with risk scores for devices from a security company
- Constructed random forest models to determine which device features were most indicative of riskiness
- Worked with a few coworkers on sentiment analysis project

RELEVANT COURSEWORK

Undergraduate Courses

- OOP & Data Structures (CS 2110)
- Functional Programming (CS 3110)
- Algorithms (CS 4820)
- Systems Programming (CS 3410)
- Operating Systems (CS 4410)
- Combinatorics (MATH 4410)
- Number Theory (MATH 3320)
- Intro Analysis (MATH 3110)
- Applicable Algebra (MATH 3360)
- Game Theory (ECON 3801)

Graduate Courses

- Foundations of Reinforcement Learning (CS 6789)
- Graduate Computer Vision (CS 6670)
- Advanced Machine Learning Systems (CS 6787)
- Deep Generative Models (CS 6785)
- Advanced Topics in Machine Learning (CS 6784)
- Machine Learning in Feedback Systems (CS 6784 - Section 2)
- Machine Learning Theory (CS 6783)
- Machine Learning with Graphs (Stanford CS 224W, done online in Summer 2021, wrote notes and did assignments)
- Deep Multitask & Meta Learning (Stanford CS 330, done online in Winter 2021-22, did assignments on GitHub)

TEACHING

- **Fall 2021:** Graduate TA for OOP & Data Structures (CS 2110)
- **Spring 2022:** Graduate TA for Introduction to Reinforcement Learning (CS 4789)
- **Fall 2022:** Graduate TA for Learning for Robot Decision Making (CS 6756, PhD)
  - Gave a guest lecture on offline reinforcement learning and offline imitation learning
- **Spring 2023:** Graduate TA for Foundations of Reinforcement Learning (CS 6789, PhD)

SERVICE

- Reviewer for NeurIPS 2023

NOTABLE AWARDS

- AIME Qualifier (2015-2018) (8/15 on 2017 exam)
- 68th in Massachusetts Mathematical Olympiad (2014)

SKILLS

Languages: Python, Java, OCaml, C++, C, LaTeX
Libraries/Frameworks: PyTorch, JAX, TensorFlow, NumPy, Pandas, SKLearn, PySpark, OpenCV, Git
Operating Systems: MacOS, Linux