**Bradly C. Stadie**
Email: bstadie@northwestern.edu

## Education

**University of Chicago** — Chicago, IL
*BA in Mathematics (Honors)* — *September 2010 - June 2014*

**University of California, Berkeley** — Berkeley, CA
*Ph.D in Statistics* — *August 2014 - August 2018*

## Employment

**Northwestern University, Department of Statistics and Data Science** — Evanston, USA
*Assistant Professor* — *September 2022 - Present*

- Assistant professor in the Department of Statistics and Data Science at Northwestern University.

**TTIC** — Chicago, USA
*Research Assistant Professor* — *September 2020 - August 2022*

- Research Assistant Professor at the Toyota Technological Institute at Chicago.

**Vector Institute** — Toronto, Canada
*Postdoctoral Scholar* — *August 2018 - July 2020*

- Postdoctoral researcher at the Vector Institute at the University of Toronto

**Open AI** — San Francisco, USA
*Research Scientist* — *March 2016 - November 2017*

- Full-time research scientist at Open AI
- Advised by Ilya Sutskever

**AI Expert at Y Combinator** — San Francisco, USA
*Part-time Partner* — *January 2017 - January 2018*

- Advised Y Combinator on the latest trends in AI
- Advised over 50 startups on AI and ML problems

**Young Scholars Program/SESAME** — Chicago, USA
*Counselor* — *June 2011 - May 2013*

- Taught mathematics to Chicagoland high school students and CPS teachers
- Full-time during summers. Every Saturday and Sunday during school year
- Head counselor from June 2012 - May 2013

## Conference Publications

**1.** *Third-Person Imitation Learning*
Bradly C. Stadie, Pieter Abbeel, Ilya Sutskever
In the proceedings of the International Conference on Learning Representations (ICLR), Toulon, France, April 2017
arXiv: https://arxiv.org/pdf/1703.01703.pdf

**2.** *One-Shot Imitation Learning*
Yan (Rocky) Duan, Marcin Andrychowicz, Bradly C. Stadie, Jonathan Ho, Jonas Schneider, Ilya Sutskever, Pieter Abbeel, Wojciech Zaremba
In Neural Information Processing Systems (NeurIPS), Long Beach, California, December 2017
arXiv: https://arxiv.org/pdf/1703.07326.pdf

**3.** *Some Considerations on Learning to Explore via Meta-Reinforcement Learning*
Bradly C. Stadie, Ge Yang, Rein Houthooft, Xi Chen, Yan Duan, Yuhuai Wu, Pieter Abbeel, Ilya Sutskever
In Neural Information Processing Systems (NeurIPS), Montreal, Canada, December 2018
arXiv: https://arxiv.org/pdf/1803.01118.pdf

**4.** *Evolved Policy Gradients*
Rein Houthooft, Richard Y. Chen, Phillip Isola, Bradly C. Stadie, Filip Wolski, Jonathan Ho, Pieter Abbeel
In Neural Information Processing Systems (NeurIPS) [Spotlight], Montreal, Canada, December 2018
arXiv: https://arxiv.org/pdf/1802.04821.pdf

**5.** *One-Shot Pruning of Recurrent Neural Networks by Jacobian Spectrum Evaluation*
Matthew Zhang, Bradly C. Stadie
In International Conference on Learning Representations (ICLR), Addis Ababa, Ethiopia, April 2020
arXiv: https://arxiv.org/pdf/1912.00120.pdf

**6.** *Learning Intrinsic Rewards as a Bi-Level Optimization Problem*
Lunjun Zhang, Bradly C. Stadie, Jimmy Ba
Conference on Uncertainty in Artificial Intelligence (UAI), July 2020. Available at: https://www.auai.org/uai2020/proceedings/66_main_paper.pdf

**7.** *Maximum Entropy Gain Exploration for Long Horizon Multi-goal Reinforcement Learning*
Harris Chan, Silviu Pitis, Stephen Zhao, Bradly C. Stadie, Jimmy Ba.
In International Conference on Machine Learning (ICML), July 2020. arXiv: https://arxiv.org/abs/2007.02832

**8.** *World Model as a Graph: Learning Latent Landmarks for Planning*
Lunjun Zhang, Ge Yang, Bradly C. Stadie
In International Conference on Machine Learning (ICML) [Long Presentation], July 2021. https://arxiv.org/pdf/2011.12491.pdf.

**9.** *Invariance Through Latent Alignment*
Takuma Yoneda, Ge Yang, Matthew Walter, Bradly C. Stadie
In Robotics: Science and Systems, July 2022. https://invariance-through-latent-alignment.github.io/

## Workshop Publications

**1.** *Incentivizing Exploration in Reinforcement Learning with Deep Predictive Models*
Bradly C. Stadie, Sergey Levine, Pieter Abbeel
In Neural Information Processing Systems (NeurIPS) Deep RL Workshop, Montreal, Canada, December 2015
arXiv: https://arxiv.org/pdf/1507.00814.pdf

**2.** *Transfer Learning for Estimating Causal Effects Using Neural Networks.*
Bradly C. Stadie, Soeren R. Kuenzel, Nikita Vemuri, Varsha Ramakrishnan, Jasjeet S. Sekhon, Pieter Abbeel
INFORMS Annual Meeting ML and causal inference workshop (2019)
arXiv: https://arxiv.org/pdf/1808.07804.pdf

**3.** *Learning to Learn from Flawed, Failed, and Figurative Demonstrations*
Ge Yang, Bradly C. Stadie, Roberto Calandra, Pieter Abbeel, Sergey Levine, Chelsea Finn
In Neural Information Processing Systems (NeurIPS) Deep RL workshop [Spotlight], Montreal, Canada, December 2018.
Available at: https://github.com/bstadie/All-Bradly-Stadie-Papers/blob/master/leaf.pdf

## Preprints

**1.** *Simulating the Stochastic Dynamics and Cascade Failure of Power Networks*
Charles Matthews, Bradly C. Stadie, Jonathan Weare, Mihai Anitescu, Christopher Demarco
Submitted to IEEE Transactions on Power Systems. Under Review.

arXiv: https://arxiv.org/pdf/1806.02420.pdf

**2.** *One-Demonstration Imitation Learning*
Bradly C. Stadie, Siyan Zhao, Qiqi Xu, Bonnie Li, Lunjun Zhang
Preprint. Available at: https://github.com/bstadie/All-Bradly-Stadie-Papers/blob/master/one-demo.pdf

**3.** *Understanding Goal Relabeling Requires Rethinking Divergence Minimization*
Lunjun Zhang, Bradly C. Stadie
Submitted to NeurIPS 2022. Available at: shorturl.at/ahQ69

## Selected Talks

- **Toyota Technological Institute Japan Conference on Symbolic Neural Learning, Nagoya Japan, Invited Speaker (July 2022)**: Making Sense of the Past with Hindsight Divergence Minimization
- **NSF EPSCoR Workshop: Artificial Intelligence With no Boundary Thinking, Invited Speaker (April 2022)**: Making Sense of the Past with Hindsight Divergence Minimization
- **MSRI Hot Topics Workshop, Invited Speaker (March 2022)**: Sim2Real Transfer in Robotics: Thoughts on Model Pruning and Robust Visual Transfer
- **Northwestern University (January 2022)**: Towards Strong Generalization in Reinforcement Learning.
- **US Naval Academy (USNA) (January 2022)**: Towards Strong Generalization in Reinforcement Learning.
- **UC Berkeley (October 2020)**: Weakly Supervised Reinforcement Learning
- **Toyota Technological Institute, Chicago (March 2020)**: Weakly Supervised Reinforcement Learning
- **Northwestern University invited speaker (October 2019)**: Learning reward functions.
- **INFORMS panel on ML in causal inference (October 2019):** Transfer learning causal effects.
- **University of Illinois, Urbana Champaign (October 2019)**: Learning reward functions.
- **Toyota Technological Institute, Chicago (May 2019)**: Learning from imperfect data.
- **University of Wisconsin, Madison (April 2019)**: Learning from imperfect data.
- **Purdue University (April 2019)**: Learning from imperfect data.
- **University of Montreal (February 2018)**: The relationship between sampling and meta learning.
- **University of Toronto (February 2018)**: The relationship between sampling and meta learning.
- **Harvard University 2017 Big Data Conference, Invited Speaker (August 2017)**: Frontiers of meta learning.
- **Open AI (March 2016)**: Exploration in deep reinforcement learning.

## Teaching

- **Statistics 133: Concepts in Computing with Data**. Graduate Student Instructor. *Jan - May 2015*
- **Statistics 088: Introduction to Data Science**. Graduate Student Instructor. *Jan - May 2016*
- **TTIC 31170 - Planning, Learning, and Estimation for Robotics and Artificial Intelligence**. Co-Instructor. *March 2021 - June 2021*
- **TTI, Nagoya Japan - Introduction to Artificial Intelligence and Machine learning**. Selected Lectures on Deep Learning. *July 2022*