Michael (Misha) Laskin

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EXPERIENCE

University of California, Berkeley *Sep. 2019 - Present*

Postdoc, Advisor: Pieter Abbeel

Led deep unsupervised learning and reinforcement learning research in Pieter Abbeel's lab. In one year, wrote nine research papers, including five as a lead or co-lead author, and three as the primary advisor.

Published multiple papers in top-tier peer-reviewed venues including the proceedings of International Conference on Machine Learning (ICML) and Neural Information Processing Systems (NeurIPS).

Representative publications include (i) Contrastive Unsupervised Representations for Reinforcement Learning (CURL), (ii) Reinforcement Learning with Augmented Data (RAD), which were the *first RL algorithms to learn as data-efficiently from pixels as from coordinate state*, and (iii) a Framework for Efficient Robotic Manipulation (FERM), which *enabled robots to learn sparse-reward policies from pixels in just 30 minutes of training.*

Claire AI *Jan. 2017 - May 2019*

Co-Founder & CTO

Designed and implemented algorithms to predict product demand for retailers. Raised $1.75M in funding from Y Combinator (W17) and Salesforce Ventures. Secured and negotiated paid enterprise contracts with several Fortune 500 retailers, including Target, Kohl's, and Coach.

University of Chicago *Oct. 2013 - Dec. 2016*

Ph.D. Candidate & Sydney Bloomenthal Fellow, Advisor: Paul Wiegmann

Discovered a new universal characteristic of the Fractional Quantum Hall Effect. Published papers in high-impact journals such as Physical Review Letters, including one featured as a PRL Editor's Suggestion. Received top Theoretical Physics Ph.D. student award, given annually to one student.

EDUCATION

University of Chicago *2013 - 2016*

Department of Physics

Top Theoretical Physics Ph.D. student

Yale University *2008 - 2012*

B.S. in Physics, B.A. in Literature

Graduated with honors

AWARDS

Sydney Bloomenthal Fellowship, Top Ph.D. student in Theoretical Physics, UChicago
Physical Science Prize for Excellence in Teaching, Top TA in the Physical Sciences, UChicago
NeurIPS Spotlight, top 3% of submissions, Reinforcement Learning with Augmented Data
PRL Editor's Suggestion, top 4% of submissions, Fractional Quantum Hall Effect in a Curved Space
Forbes 30 Under 30, Retail & E-commerce, Claire AI
Y Combinator, 1.5% acceptance rate, Claire AI
Calabrese Award, Best undergraduate thesis, Yale

COMMUNITY

Co-Organized NeurIPS 2020 Deep Reinforcement Learning Workshop with Pieter Abeel, Coline Devin, Chelsea Finn, Kimin Lee, Joelle Pineau, Janarthanan Rajendran, David Silver, Satinder Singh, and Vivek Veeriah.

Open-sourced PyTorch code for CURL and RAD algorithms, extremely simple to set up and run.

Member of the UC Berkeley AI Ph.D. Admissions Committee for 2020

MENTORSHIP

Adam Stooke, Ph.D. at UC Berkeley, now at DeepMind

Wenling (Wendy) Shang, Ph.D. at University of Amsterdam, now at DeepMind

Catherine Cang, Undergraduate at UC Berkeley

Xiaofei Wang, Undergraduate at UC Berkeley

Albert Zhan, Undergraduate at UC Berkeley

Philip Zhao, Undergraduate at UC Berkeley

TEACHING

Abbeel Lab Reading Group: Organize weekly reading groups and mentor graduate and undergraduate student on their presentations, UC Berkeley

Advanced Mathematical Physics: Group Theory and Lie Algebras, Lecturer, University of Chicago

Introduction to Physics: Classical Physics, Teaching Assistant, University of Chicago

Introduction to Physics: Electricity and Magnetism, Teaching Assistant, University of Chicago

Statistical Physics, Teaching Assistant

Quantum Mechanics, Teaching Assistant, University of Chicago

MACHINE LEARNING PAPERS

Peer-Reviewed Publications

CURL: Contrastive Unsupervised Representations for Reinforcement Learning
Michael Laskin, Aravind Srinivas, Pieter Abbeel
Thirty-seventh International Conference on Machine Learning 2020

Reinforcement Learning with Augmented Data
Michael Laskin, Kimin Lee, Adam Stooke, Lerrel Pinto, Pieter Abbeel, Aravind Srinivas
Thirty-fourth Conference on Neural Information Processing Systems 2020, Spotlight (top 3% of submissions)

Sparse Graphical Memory for Robust Planning
Scott Emmons, Ajay Jain, **Michael Laskin**, Thanard Kurutach, Pieter Abbeel, Deepak Pathak
Thirty-fourth Conference on Neural Information Processing Systems 2020

Pre-prints

Parallel Training of Deep Networks with Local Updates
Michael Laskin, Luke Metz, Seth Nabarro, Mark Saroufim, Badreddine Noune, Carlo Luschi, Jascha Sohl-Dickstein, Pieter Abbeel, Submitted to ICLR 2021

Decoupling Representation Learning from Reinforcement Learning
Adam Stooke, Kimin Lee, Pieter Abbeel, **Michael Laskin**
Submitted to ICLR 2021, arXiv:2009.08319

Reinforcement Learning with Latent Flow
Wenling Shang, Xiaofei Wang, Aravind Rajeswaran, Aravind Srinivas, Yang Gao, Pieter Abbeel, **Michael Laskin**, Submitted to ICLR 2021

A Framework for Efficient Robotic Manipulation
Albert Zhan, Ruihan Zhao, Lerrel Pinto, Pieter Abbeel, **Michael Laskin**, Submitted to ICRA 2021

Weighted Bellman Backups for Improved Signal-to-Noise in Q-Updates
Kimin Lee, **Michael Laskin**, Aravind Srinivas, Pieter Abbeel
Submitted to ICLR 2021, arXiv:2007.04938

Discrete Representation Learning for Goal-Conditioned Visual Reinforcement Learning
Michael Laskin, Thanard Kurutach, Pieter Abbeel
NeurIPS Deep Reinforcement Learning Workshop 2019

PHYSICS PAPERS

Note: Authorship order is usually alphabetical in the Wiegmann theoretical physics group.

Peer-Reviewed Publications

Emergent conformal symmetry and geometric transport properties of quantum Hall states on singular surfaces
Tankut Can, Yu Hung Chiu, **Michael Laskin**, Paul Wiegmann Physical review letters 117 (26), 266803, 2016

Population of the giant pairing vibration
Michael Laskin, Richard Casten, Augusto Macchiavelli, Roderick Clark, Dorel Bucurescu Physical Review C 93 (3), 034321, 2016

Collective field theory for quantum Hall states
Michael Laskin, Tankut Can, Paul Wiegmann Physical Review B 92 (23), 235141 , 2015

Geometry of quantum Hall states: Gravitational anomaly and transport coefficients
Tankut Can, **Michael Laskin**, Paul Wiegmann Annals of Physics 362, 752-794, 2015

Fractional quantum Hall effect in a curved space: gravitational anomaly and electromagnetic response
Tankut Can, **Michael Laskin**, Paul Wiegmann Physical review letters 113 (4), 046803, 2014