

# Jonathan N. Lee

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- Education**
- Ph.D. Computer Science**, 2019—  
**Stanford University**
  - B.S. (Highest Honors) Electrical Engineering & Computer Science**, 2019  
**University of California, Berkeley**  
*EECS Honors Concentration: Mathematics & Statistics*  
*GPA: 3.96*
- Research & Teaching**
- Stanford AI Lab**, 2020—  
PhD Student  
*Advisor: Emma Brunskill*
  - Laboratory for Automation Science and Engineering**, 2015—2019  
Undergraduate Researcher  
*Advisor: Ken Goldberg*
  - Dept. of Electrical Engineering & Computer Science**, 2017—2018  
Machine Learning (CS 189) Teaching Assistant, 2018  
Signals and Systems (EE 120) Teaching Assistant, 2017  
Machine Learning (CS 189) Tutor/Academic Intern, 2017  
Eta Kappa Nu EECS Honor Society Tutor, 2017
- Honors**
- NSF Graduate Research Fellowship
  - The Ravi Family Graduate Fellowship
  - CRA Outstanding Undergraduate Researcher Award 2019 Finalist
  - UC Berkeley EECS Honors Degree Program
  - Eta Kappa Nu EECS Honor Society
  - Tau Beta Pi Engineering Honor Society
  - Ford Oval Scholarship
  - UC Berkeley Kraft Award
  - UC Berkeley College of Engineering Dean's List
  - 2nd Place Siemens FutureMakers Challenge UC Berkeley.
- Industry**
- Consulting for GitHub, Machine Learning at Berkeley**, 2016  
Developed a robust pipeline for feature extraction and classification to automatically classify programming languages for GitHub's code repositories.
  - Consulting for H2O.ai, Machine Learning at Berkeley**, 2016  
Built platform to demonstrate H2O machine learning algorithms.

**Software Engineering Intern, DreameGGs Funding Club, 2015**

Developed machine learning models to predict success of independent movies. Increased accuracy by 5.6%.

**Software Engineering Intern, Salient Technology Intl. LLC, 2014**

Built www.vstudy.co, a WebRTC-driven video client for student collaboration.

Coursework

**Graduate Courses:** Optimization Theory, Nonlinear Systems, Linear System Theory, Learning and Optimization, Information Theory, Theoretical Statistics.

**Undergraduate Courses:** Convex Optimization, Feedback Control, Probability and Random Processes, Machine Learning, Signals and Systems, Artificial Intelligence, Real Analysis, Abstract Algebra, Linear Algebra, Multivariate Calculus, Data Structures and Algorithms, Operating Systems.

Preprints

*Dynamic Regret Convergence Analysis and an Adaptive Regularization Algorithm for On-Policy Robot Imitation Learning.*

**Jonathan Lee**, Michael Laskey, Ajay Tanwani, Anil Aswani, Ken Goldberg.  
In submission to International Journal of Robotics Research.

Publications

*Accelerated Message Passing for Entropy-Regularized MAP Inference.*

**Jonathan Lee**, Aldo Pacchiano, Peter Bartlett, Michael I. Jordan.  
International Conference on Machine Learning (ICML), 2020.

*Online Learning with Continuous Variations: Dynamic Regret and Reductions.*

Ching-An Cheng\*, **Jonathan Lee\***, Ken Goldberg, Byron Boots.  
International Conference on Artificial Intelligence and Statistics (AISTATS), 2020.

*Convergence Rates of Smooth Message Passing with Rounding in Entropy-Regularized MAP Inference.*

**Jonathan Lee\***, Aldo Pacchiano\*, Michael I. Jordan  
International Conference on Artificial Intelligence and Statistics (AISTATS), 2020.

*On-Policy Robot Imitation Learning from a Converging Supervisor.*

Ashwin Balakrishna\*, Brijen Thananjeyan\*, **Jonathan Lee**, Arsh Zahed, Felix Li, Joseph Gonzalez, Ken Goldberg  
Conference on Robot Learning (CoRL), 2019.

**Accepted for long oral presentation (5% of all papers)**

*A Dynamic Regret Analysis and Adaptive Regularization Algorithm for On-Policy Robot Imitation Learning.*

**Jonathan Lee**, Michael Laskey, Ajay Tanwani, Anil Aswani, Ken Goldberg.  
International Workshop on the Algorithmic Foundations of Robotics (WAFR), 2018.  
**Invited to special issue in the International Journal of Robotics Research.**

*Generalizing Robot Imitation Learning with Invariant Hidden Semi-Markov Models.*

Ajay Tanwani, **Jonathan Lee**, Brijen Thananjeyan, Michael Laskey, Sanjay Krishnan, Roy Fox, Ken Goldberg, Sylvain Calinon.

International Workshop on the Algorithmic Foundations of Robotics (WAFR), 2018.  
**Invited to special issue in the International Journal of Robotics Research.**

*Constraint Estimation and Derivative-Free Recovery for Robot Learning from Demonstrations.*

**Jonathan Lee**, Michael Laskey, Roy Fox, Ken Goldberg.  
Conference on Automation Science and Engineering (CASE), 2018

*DART: Noise Injection for Robust Imitation Learning.*

Michael Laskey, **Jonathan Lee**, Roy Fox, Anca Dragan, Ken Goldberg.  
Conference on Robot Learning (CoRL), 2017.

*Comparing Human-Centric and Robot-Centric Sample Efficiency for Robot Deep Learning from Demonstrations.*

Michael Laskey, Caleb Chuck, **Jonathan Lee**, Jeffrey Mahler, Sanjay Krishnan, Kevin Jamieson, Anca Dragan, Ken Goldberg.  
Conference on Robotics and Automation (ICRA), 2017.

*Robot Grasping in Clutter: Using a Hierarchy of Supervisors for Learning from Demonstrations.*

Michael Laskey, **Jonathan Lee**, Caleb Chuck, David Gealy, Wesley Hsieh, Florian Pokorny, Anca Dragan, Ken Goldberg.  
Conference on Automation Science and Engineering (CASE), 2016.

Short  
papers

*Continuous Online Learning and New Insights to Online Imitation Learning*

**Jonathan Lee\***, Ching-An Cheng\*, Ken Goldberg, Byron Boots.  
NeurIPS Optimization in Reinforcement Learning Workshop, 2019.

**Best Paper Award**

*Stability Analysis of On-Policy Imitation Learning Algorithms Using Dynamic Regret.*

**Jonathan Lee**, Michael Laskey, Ajay Tanwani, Ken Goldberg.  
Robotics: Science and Systems (RSS) Workshop on Imitation and Causality, 2018.  
**Accepted for spotlight presentation.**

*Iterative Noise Injection for Scalable Imitation Learning.*

Michael Laskey, **Jonathan Lee**, Wesley Hsieh, Richard Liaw, Jeffrey Mahler, Roy Fox, Ken Goldberg.  
arXiv, 2016.

Activities

Machine Learning at Berkeley. The Triple Helix at Berkeley.