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## EDUCATION

MS/PhD in Electrical Engineering, 2017-present  
Stanford University.

BS *phi beta kappa* in Electrical Engineering & Computer Sciences, 2013-2017  
University of California, Berkeley. GPA 3.98/4.0.

## RESEARCH EXPERIENCE

Stanford University Convex Optimization Group (Prof. Stephen Boyd), Department of Electrical Engineering, Stanford University, 2018-present.

Stanford Intelligent Systems Laboratory (Prof. Mykel Kochenderfer), Department of Aeronautics and Astronautics, Stanford University, 2017-2018.

Berkeley Wireless Research Center (Prof. Anant Sahai), Department of Electrical Engineering, University of California, Berkeley, 2016-2017.

Robot Learning Lab (Prof. Pieter Abbeel), Department of Computer Science, University of California, Berkeley, 2014.

## PAPERS

- S. Barratt**, and S. Boyd (2018). Stochastic Control with Affine Dynamics and Extended Quadratic Costs. Manuscript. [[paper](#), [code](#)]
- S. Barratt**, M. Kochenderfer, and S. Boyd (2018). Learning Probabilistic Trajectory Models of Aircraft in Terminal Airspace from Position Data. IEEE Transactions on Intelligent Transportation Systems. [[paper](#), [code](#)]
- S. Barratt** (2018). Direct Model Predictive Control. ICML / IJCAI / AAMAS 2018 Workshop on Planning and Learning (PAL-18). [[paper](#)]
- S. Barratt**, and R. Sharma (2018). A Note on the Inception Score. ICML 2018 Workshop on Theoretical Foundations and Applications of Deep Generative Models. Manuscript. [[paper](#)]
- S. Barratt**, and R. Sharma (2018). Optimizing for Generalization in Machine Learning with Cross-Validation Gradients. Manuscript. [[paper](#)]
- R. Sharma, **S. Barratt**, S. Ermon, and V. Pande (2018). Improved Training with Curriculum GANs. Manuscript. [[paper](#)]
- S. Barratt**, and R. Sharma (2018). Interpreting a Decomposition Method for Sparse Nonconvex Optimization. Manuscript. [[paper](#)]
- S. Barratt** (2018). A Matrix Gaussian Distribution. Manuscript. [[paper](#)]

- S. Barratt** (2018). On the Differentiability of the Solution to Convex Optimization Problems. Manuscript. [\[paper\]](#)
- C. de Vrieze, **S. Barratt**, D. Tsai, and A. Sahai (2018). Cooperative Multi-Agent Reinforcement Learning for Low-Level Wireless Communication. Manuscript. [\[paper\]](#)
- S. Barratt** (2017). InterpNet: Neural Introspection for Interpretable Deep Learning. Interpretable ML Symposium, 31st Conference on Neural Information Processing Systems (NIPS 2017). [\[paper\]](#), [code](#)
- A. Lee, M. Goldstein, **S. Barratt**, and P. Abbeel (2015). A Non-Rigid Point and Normal Registration Algorithm with Applications to Learning from Demonstrations. International Conference on Robotics and Automation (ICRA). [\[paper\]](#), [videos](#)

## INDUSTRY EXPERIENCE

- Platform Engineering Intern - Software Robotics Corporation (SoRoCo), Cambridge, MA, 2016. Worked on U.S. Patent 20180113780 (Systems and methods for discovering automatable tasks).
- Hardware Engineering Intern - Skybox Imaging, Google Inc., Mountain View, 2015. Worked on U.S. Patent 9509894 (Capturing images using controlled vibration).
- Wireless Testing Intern - Qualcomm-Atheros, Sunnyvale, 2012.

## RESEARCH INTERESTS

- Convex optimization
- Machine learning
- Optimal control

## TEACHING EXPERIENCE

- Course Assistant - EE 364A, Convex Optimization, Department of Electrical Engineering, Stanford University, 2018.
- Teaching Assistant - EE 16B, Designing Information Devices and Systems II, Department of Electrical Engineering, University of California, Berkeley, 2016.
- Student Instructor - EE 98, IEEE Micromouse, Department of Electrical Engineering, University of California, Berkeley, 2015.

## AWARDS AND HONORS

- NSF Graduate Research Fellowships Program, 2017-present.
- Phi Beta Kappa Society, 2017.
- Regent's and Chancellor's Undergraduate Scholarship, 2013-2017.
- Dean's Honors, 2013-2017.
- Best Amazon Hack, CalHacks, 2015.
- Best Berkeley Student Hack, CalHacks, 2015.

First Place, Capital One Engineering Summit Hackathon, 2015.

Kraft Award for Freshmen, 2013.