

# Gregory M. Kahn

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## Education

- 2015–present **Ph.D., Computer Science**, *The University of California*, Berkeley.  
2011–2015 **B.S., Electrical Engineering and Computer Sciences**, *The University of California*, Berkeley, *GPA – 3.97*.

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## Experience

### Academic

- 2015–present **Graduate Student Researcher**, *Berkeley AI Research (BAIR) Lab*, UC Berkeley.  
Advisors: Pieter Abbeel and Sergey Levine  
2013–2015 **Undergraduate Research Apprentice**, *Robot Learning Lab*, UC Berkeley.  
Advisor: Pieter Abbeel

### Professional

- Spring 2019 **Autonomy Research Intern**, *Skydio*, Redwood City, CA.  
Developed the imitation learning framework CEILing that leveraged the Skydio Autonomy Engine in order to train a deep neural network pilot to film while avoiding obstacles using only 3 hours of logged data. [Blog](#) and [Video](#).  
Summer 2010 **Robotics and Software Intern**, *FLIR Motion Control Systems, Inc.*, Burlingame, CA.

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## Publications

- [1] Katie Kang\*, Suneel Belkhale\*, Gregory Kahn\*, Pieter Abbeel, and Sergey Levine. **Generalization through Simulation: Integrating Simulated and Real Data into Deep Reinforcement Learning for Vision-Based Autonomous Flight**. In *ICRA*, 2019
- [2] Rowan McAllister, Gregory Kahn, Jeff Clune, and Sergey Levine. **Robustness to Out-of-Distribution Inputs via Task-Aware Generative Uncertainty**. In *ICRA*, 2019
- [3] Gregory Kahn\*, Adam Villaflor\*, Pieter Abbeel, and Sergey Levine. **Composable Action-Conditioned Predictors: Flexible Off-Policy Learning for Robot Navigation**. In *CoRL*, 2018
- [4] Anusha Nagabandi, Guangzhao Yang, Thomas Asmar, Ravi Pandya, Gregory Kahn, Sergey Levine, and Ronald S. Fearing. **Learning Image-Conditioned Dynamics Models for Control of Under-actuated Legged Millirobots**. In *IROS*, 2018
- [5] Gregory Kahn, Adam Villaflor, Bosen Ding, Pieter Abbeel, and Sergey Levine. **Self-Supervised Deep Reinforcement Learning with Generalized Computation Graphs for Robot Navigation**. In *ICRA*, 2018

- [6] Anusha Nagabandi, Gregory Kahn, Ronald S. Fearing, and Sergey Levine. **Neural Network Dynamics for Model-Based Deep Reinforcement Learning with Model-Free Fine-Tuning**. In *ICRA*, 2018
- [7] Gregory Kahn, Tianhao Zhang, Sergey Levine, and Pieter Abbeel. **PLATO: Policy Learning using Adaptive Trajectory Optimization**. In *ICRA*, 2017
- [8] Karol Hausman, Gregory Kahn, Sachin Patil, Joerg Mueller, Ken Goldberg, Pieter Abbeel, and Gaurav Sukhatme. **Occlusion-Aware Multi-Robot 3D Tracking**. In *IROS*, 2016
- [9] Tianhao Zhang, Gregory Kahn, Sergey Levine, and Pieter Abbeel. **Learning Deep Control Policies for Autonomous Aerial Vehicles with MPC-Guided Policy Search**. In *ICRA*, 2016
- [10] Benjamin Charrow, Gregory Kahn, Sachin Patil, Sikang Liu, Ken Goldberg, Pieter Abbeel, Nathan Michael, and Vijay Kumar. **Information-Theoretic Planning with Trajectory Optimization for Dense 3D Mapping**. In *RSS*, 2015
- [11] Gregory Kahn, Peter Sujan, Sachin Patil, Shaunak D. Bopardikar, Julian Ryde, Ken Goldberg, and Pieter Abbeel. **Active Exploration using Trajectory Optimization for Robotic Grasping in the Presence of Occlusions**. In *ICRA*, 2015
- [12] Sachin Patil, Gregory Kahn, Michael Laskey, John Schulman, Ken Goldberg, and Pieter Abbeel. **Scaling up Gaussian Belief Space Planning through Covariance-Free Trajectory Optimization and Automatic Differentiation**. In *WAFR*, 2014
- [13] Ben Kehoe, Gregory Kahn, Jeffrey Mahler, Jonathan Kim, Alex Lee, Anna Lee, Keisuke Nakagawa, Sachin Patil, W. Douglas Boyd, Pieter Abbeel, and Ken Goldberg. **Autonomous Multilateral Debridement with the Raven Surgical Robot**. In *ICRA*, 2014

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## Invited Talks

- Jun. 2018 **Real-World Reinforcement Learning for Mobile Robot**, *REWORK Deep Learning for Robotics Summit*.
- Dec. 2017 **Safety Challenges for RL in Robotics**, *NIPS Workshop on Machine Learning for Intelligent Transportation Systems*, (with Pieter Abbeel).
- Oct. 2016 **Learning Control Policies for Partially Observable Safety-Critical Systems applied to High-Speed Flight**, *IROS Workshop on Vision-based High Speed Autonomous Navigation of UAVs*.
- Jun. 2016 **Learning Control Policies for Partially Observable Safety-Critical Systems**, *ICML Workshop on Reliable Machine Learning in the Wild*.

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## Workshops

- Dec. 2017 **Self-supervised Deep Reinforcement Learning with Generalized Computation Graphs for Robot Navigation**, *NIPS Workshop on Acting and Interacting in the Real World: Challenges in Robot Learning*.
- Nov. 2016 **Uncertainty-Aware Reinforcement Learning for Collision Avoidance**, *Bay Area Robotics Symposium*.

Dec. 2015 **Learning Deep Control Policies for Autonomous Aerial Vehicles with MPC-Guided Policy Search**, *NIPS Workshop on Deep Reinforcement Learning*.

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## Honors and Awards

2016–present National Science Foundation Graduate Research Fellowship  
2016 National Defense Science and Engineering Graduate Fellowship (*declined*)

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## Research Mentoring

Present Katie Kang, Suneel Belkhale  
Past Aditya Baradwaj, Samantha Wathugala, Sam Lowe, Adam Villaflor, Zhining (Anna) Zhu, Bosen Ding, Trey Fortmuller  
2017–present **PAIRS: Pre-AI Research Studies**, Co-Organizer.  
Organized mentoring program for undergraduates who are underrepresented in AI.

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## Teaching Experience

Fall 2018 **Teaching Assistant**, *CS294-112: Deep Reinforcement Learning*.  
Spring 2016 **Teaching Assistant**, *CS188: Introduction to Artificial Intelligence*.

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## Affiliations

2015–present Phi Beta Kappa Honor Society Member  
2012–present Eta Kappa Nu EECS Honor Society Member  
2011–present IEEE Member