Gregory M. Kahn

gkahn13@gmail.com
https://gregkahn.github.io

Education

2015–2020 **University of California, Berkeley**, *PhD*.
Thesis: "Mobile Robot Learning"
Advisors: Sergey Levine and Pieter Abbeel
Berkeley AI Research (BAIR) Lab
Department of Electrical Engineering and Computer Sciences

2011–2015 **University of California, Berkeley**, *Bachelor of Science*.
Electrical Engineering and Computer Sciences
GPA – 3.97

Experience

2020–present **Founding Engineer**, *Stealth Surgical Robotics Startup*.

2015–2020 **Graduate Student Researcher**, *Berkeley AI Research (BAIR) Lab*, UC Berkeley.
Advisors: Sergey Levine and Pieter Abbeel

Spring 2019 **Autonomy Research Intern**, *Skydio*.
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.

2013–2015 **Undergraduate Research Apprentice**, *Robot Learning Lab*, UC Berkeley.
Advisor: Pieter Abbeel

Summer 2010 **Robotics and Software Intern**, *FLIR Motion Control Systems, Inc.*.

Publications

[1] Gregory Kahn, Pieter Abbeel, and Sergey Levine. **BADGR: An Autonomous Self-Supervised Learning-Based Navigation System**. In *RA-L*, 2021

[2] Suneel Belkhale, Rachel Li, Gregory Kahn, Rowan McAllister, Roberto Calandra, and Sergey Levine. **Model-Based Meta-Reinforcement Learning for Flight with Suspended Payloads**. In *RA-L*, 2021

[3] Gregory Kahn, Pieter Abbeel, and Sergey Levine. **LaND: Learning to Navigate from Disengagements**. In *arXiv*, 2020

[4] 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

[5] Rowan McAllister, Gregory Kahn, Jeff Clune, and Sergey Levine. **Robustness to Out-of-Distribution Inputs via Task-Aware Generative Uncertainty**. In *ICRA*, 2019

[6] Gregory Kahn*, Adam Villaflor*, Pieter Abbeel, and Sergey Levine. **Composable Action-Conditioned Predictors: Flexible Off-Policy Learning for Robot Navigation**. In *CoRL*, 2018

[7] 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

[8] 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

[9] 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

[10] Gregory Kahn, Adam Villaflor, Vitchyr Pong, Pieter Abbeel, and Sergey Levine. **Uncertainty-Aware Reinforcement Learning for Collision Avoidance**. In *arXiv*, 2017

[11] Gregory Kahn, Tianhao Zhang, Sergey Levine, and Pieter Abbeel. **PLATO: Policy Learning using Adaptive Trajectory Optimization**. In *ICRA*, 2017

[12] Karol Hausman, Gregory Kahn, Sachin Patil, Joerg Mueller, Ken Goldberg, Pieter Abbeel, and Gaurav Sukhatme. **Occlusion-Aware Multi-Robot 3D Tracking**. In *IROS*, 2016

[13] 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

[14] 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

[15] 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

[16] 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

[17] 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

Invited Talks and Workshops

Jun. 2020 **BADGR: An Autonomous Self-Supervised Learning-Based Navigation System**, *RL for Real Life*.

Jun. 2018 **Real-World Reinforcement Learning for Mobile Robot**, *REWORK Deep Learning for Robotics Summit*.

Dec. 2017 **Self-supervised Deep Reinforcement Learning with Generalized Computation Graphs for Robot Navigation**, *NeurIPS Workshop on Acting and Interacting in the Real World: Challenges in Robot Learning*.

Dec. 2017 **Safety Challenges for RL in Robotics**, *NeurIPS Workshop on Machine Learning for Intelligent Transportation Systems*, (with Pieter Abbeel).

Nov. 2016 **Uncertainty-Aware Reinforcement Learning for Collision Avoidance**, *Bay Area Robotics Symposium*.

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*.

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

Honors and Awards

2016–2020 National Science Foundation Graduate Research Fellowship

2016 National Defense Science and Engineering Graduate Fellowship (*declined*)

Research Mentoring

2015–2020 Katie Kang, Suneel Belkhale, Aditya Baradwaj, Samantha Wathugala, Sam Lowe, Adam Villaflor, Zhining (Anna) Zhu, Bosen Ding, Trey Fortmuller

2017–2019 **PAIRS: Pre-AI Research Studies**, Co-Organizer.
Organized mentoring program for undergraduates who are underrepresented in AI.

Teaching Experience

Fall 2018 **Teaching Assistant**, *CS294-112: Deep Reinforcement Learning*.

Spring 2016 **Teaching Assistant**, *CS188: Introduction to Artificial Intelligence*.

Affiliations

2015–present Phi Beta Kappa Honor Society Member

2012–present Eta Kappa Nu EECS Honor Society Member

2011–present IEEE Member