

# Ashwin Balakrishna

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EDUCATION	UC Berkeley, Berkeley, CA <i>Ph.D.</i> in Computer Science Advisor: Ken Goldberg	2018-Present
	California Institute of Technology, Pasadena, CA <i>Bachelor of Science</i> in Electrical Engineering Advisor: Steven Low, Hyuck Choo	2014-2018 GPA: 3.9/4.0
EXPERIENCE	UC Berkeley AUTOLAB, Ph.D. Student Researcher	2018-Present
	SpaceX, Avionics Software Intern	2017
	Intel, Power Electronics Intern	2016
	Caltech Choo Lab, Student Researcher	2015-2017
PREPRINTS	[3] Brijen Thananjeyan*, <b>Ashwin Balakrishna*</b> , Ugo Rosolia, Joseph E. Gonzalez, Aaron Ames, Ken Goldberg. A Sample-Based Learning MPC Algorithm for Stochastic Dynamical Systems with Controller Domain Expansion and Goal Set Adaptation. 2020.	
	[2] Ryan Hoque, Daniel Seita, <b>Ashwin Balakrishna</b> , Aditya Ganapathi, Ajay Kumar Tanwani, Nawid Jamali, Katsu Yamane, Soshi Iba, Ken Goldberg. VisuoSpatial Foresight for Multi-Step, Multi-Task Fabric Manipulation. 2020.	
	[1] Daniel Seita, Aditya Ganapathi, Ryan Hoque, Minh Hwang, Edward Cen, Ajay Kumar Tanwani, <b>Ashwin Balakrishna</b> , Brijen Thananjeyan, Jeffrey Ichnowski, Nawid Jamali, Katsu Yamane, Soshi Iba, John Canny, Ken Goldberg. Deep Imitation Learning of Sequential Fabric Smoothing Policies. 2020.	
PUBLICATIONS	[15] Brijen Thananjeyan*, <b>Ashwin Balakrishna*</b> , Ugo Rosolia, Felix Li, Rowan McAllister, Joseph E. Gonzalez, Sergey Levine, Francesco Borrelli, Ken Goldberg, Safety Augmented Value Estimation from Demonstrations (SAVED): Safe Deep Model-Based RL for Sparse Cost Robotic Tasks. <i>Robotics and Automation Letters, International Conference on Robotics and Automation, and NeurIPS Deep Reinforcement Learning Workshop</i> . 2020.	
	[14] Priya Sundareshan, Jeniffer Grannen, Brijen Thananjeyan, <b>Ashwin Balakrishna</b> , Michael Laskey, Kevin Stone, Joseph E. Gonzalez, Ken Goldberg. Learning Interpretable and Transferable Rope Manipulation Policies Using Depth Sensing and Dense Object Descriptors, <i>International Conference on Robotics and Automation</i> . 2020.	
	[13] <b>Ashwin Balakrishna*</b> , Brijen Thananjeyan*, Jonathan Lee, Felix Li, Arsh Zahed, Joseph E. Gonzalez, Ken Goldberg. On-Policy Robot Imitation Learning from a Converging Supervisor, <i>Conference on Robot Learning (CoRL) - Oral and ICML Sequential Decision Making Workshop</i> . 2019.	
	[12] Michael Danielczuk*, Andrey Kurenkov*, <b>Ashwin Balakrishna</b> , Matthew Matl, David Wang, Roberto Martin-Martin, Animesh Garg, Silvio Savarase, Ken Goldberg. Mechanical Search: Multi-Step Retrieval of a Target Object Occluded by Clutter, <i>International Conference on Robotics and Automation</i> . 2019.	

- [11] Zisu Dong, Sanjay Krishnan, Sona Dolasia, **Ashwin Balakrishna**, Michael Danielczuk, and Ken Goldberg. Automating Planar Object Singulation by Linear Pushing with Single-point and Multi-point Contacts, *Conference on Automation Sciences and Engineering*. 2019.
- [10] Jeong Oen Lee, Vinayak Narasimhan, **Ashwin Balakrishna**, Marcus R. Smith, Juan Du, David Sretavan, and Hyuck Choo. Fabry–Perot Optical Sensor and Portable Detector for Monitoring High-Resolution Ocular Hemodynamics. *IEEE Photonics Letters*. 2019.
- [9] Men-Andrin Meier, Zachary E Ross, Anshul Ramachandran, **Ashwin Balakrishna**, Suraj Nair, Peter Kundzicz, Zefeng Li, Jennifer Andrews, Egill Hauksson, Yisong Yue. Reliable Real-Time Seismic Signal/Noise Discrimination With Machine Learning. *Journal of Geophysical Research: Solid Earth and Machine Learning for Geophysical and NeuIPS Geochemical Signals Workshop*. 2018.
- [8] Jeong Oen Lee, Haeri Park, Juan Du, **Ashwin Balakrishna**, Oliver Chen, David Sretavan, Hyuck Choo. A microscale optical implant for continuous in vivo monitoring of intraocular pressure. *Microsystems and Nanoengineering*. 2017.
- [7] Frank L Brodie, David A Ramirez\*, Sundar Pandian\*, Kelly Woo, **Ashwin Balakrishna**, Eugene De Juan, Hyuck Choo, Robert H Grubbs. Novel positioning sensor with real-time feedback for improved postoperative positioning: pilot study in control subjects. *Clinical Ophthalmology*. 2017.
- [6] Jeong Oen Lee, Haeri Park, Juan Du, Vinayak Narasimhan, **Ashwin Balakrishna**, Oliver Chen, David Sretavan, Hyuck Choo. In vivo Intraocular Pressure Monitoring using Implantable Optomechanical Sensor. *International Symposium on Optomechatronic Technology*. 2016.
- [5] Jeong Oen Lee, Haeri Park, Juan Du, Vinayak Narasimhan, **Ashwin Balakrishna**, Oliver Chen, David Sretavan, Hyuck Choo. Validation of sensor for postoperative positioning with intraocular gas. *Clinical Ophthalmology*. 2016.
- [4] Hyunjun Cho, **Ashwin Balakrishna**, Yuan Ma, Joen Oen Lee, Hyuck Choo. Efficient Power Generation from Vocal Fold Vibrations for Medical Electronic Implants. *International Conference on Micro Electro-Mechanical Systems (MEMS)*. 2016.
- [3] **Ashwin Balakrishna**, Oliver Chen, Jeong Oen Lee, Hyuck Choo. A Neural Network Approach to Monitor Intraocular Pressure for Glaucoma Diagnosis. *PIERS (Oral Presentation)*. 2016.
- [2] Sophia Chen, Jeff Rosenberg, **Ashwin Balakrishna**, Grace Ma, Hyunjun Cho, Jeong Oen Lee and Hyuck Choo. On-Demand Power Source for Medical Electronic Implants: Acousto-Mechanical Vibrations from Human Vocal Folds. *NAPA Institute Workshop on Enabling Future Health Care: the Role of Micro and Nano Technologies*. 2015.
- [1] **Ashwin Balakrishna**. Optimal Control Strategies for Trajectory Optimization with Applications to Continuous Solar Flight. *Oral Presentation at INFORMS Annual Meeting, E=mc2 High School Mathematical Science Journal, Intel Science Talent Search Semifinalist*. 2013.

## TEACHING

*Teaching Assistant*, California Institute of Technology  
EE 111: Signal-Processing Systems and Transforms

2017

## AWARDS & HONORS

National Science Foundation Graduate Research Fellowship  
Henry Ford II Scholar Award (Top GPA in EE at Caltech)

2018-2021  
2017

**PROFESSIONAL** *Paper Reviewing:*

**ACTIVITIES**

IEEE International Conference on Robotics and Automation (ICRA) 2020

Conference on Neural Information Processing Systems (NeurIPS): Machine Learning  
for the Physical Sciences Workshop 2019

Conference on Automation Sciences and Engineering (CASE) 2019

*Services:*

Berkeley AI Research Admissions Reader 2019

Berkeley Be a Scientist Program Volunteer 2019