

Adithya Murali
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Robotics Institute,
Carnegie Mellon University

Education

Carnegie Mellon University, Pittsburgh PA PhD, M.S., The Robotics Institute, School of Computer Science	Present
University of California Berkeley, Berkeley CA B.S., Electrical Engineering & Computer Science (Honors, Phi Beta Kappa) Honors Minor in Economics Advisors: Ken Goldberg, Pieter Abbeel, Allison Okamura	2012-2015
Raffles Institution (High School & Junior College), Singapore	2006-2011

Industry Experience

Amazon Web Services , Software Development Engineer, Seattle WA Amazon Rekognition	2016
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Research Experience

Berkeley Artificial Intelligence Lab , Research Assistant, Berkeley CA Undergraduate research with Prof. Ken Goldberg and Prof. Pieter Abbeel	2014-2015
Stanford University , CHARM Lab, Stanford CA Collaborative research with Prof. Allison Okamura's group	2015
Lawrence Berkeley National Lab , Research Assistant, Berkeley CA Undergraduate research with Prof. Ali Javey	2013
A*STAR IMRE , Research Assistant, Singapore A-level H3 Research with Dr. Nikolai Yakovlev	2010-2011
MIT , Rickoid Scholar, Cambridge MA Summer research with Prof. Rebecca Carrier, the CEE Research Science Institute	Summer 2010
Nanyang Technological University , Research Assistant, Singapore Science Mentorship Program with Prof. Sathyan Subbiah	2008-2011

Awards and Honors

Uber/Carnegie Mellon University , Presidential fellowship for grad school	2017
Columbia University , Presidential fellowship for grad school	2016
University of Texas at Austin , Chancellor fellowship for grad school	2016
University of Washington , CSE fellowship for grad school	2016
ICRA 2015 , Best Student/Medical Robotics Paper Finalist	2015
ICRA 2015 , Best Poster for Workshop on "Shared Frameworks for Medical Robotics"	2015
ICRA 2015 , Travel grant to present paper at robotics conference	2015
Cal Alumni Association , The MacBride, and Dolder Family Alumni Scholarship	2014
DAAD/Max-Planck Institute Scholarship , Support for summer research	2014
UC Berkeley , Leslie Lipson Essay Prize	2013
Cal Alumni Association , The Leadership Award	2013

UC Berkeley , Edward Kraft Award (Top Freshman GPA)	2013
Raffles Institution , All-Rounded Excellence Award	2012
Ministry of Education Singapore , SSEF Gold Award for top junior college research	2011
MIT , Top 10 presentation finalists at CEE Research Science Institute	2010

Press Coverage

"New Research Center Aims to Develop Second Generation of Surgical Robots", by John Markoff. *The New York Times*. Oct 23, 2014.

"Robots vs. Ebola" by *CBS News* and *CNET*. Nov 2014.

"Students shine in Scientific Research" by Lin Zhaowei (appeared on the front page of Singapore's national newspaper). *The Straits Times*. January 20, 2012.

Teaching

Teaching Assistant , CMU Robotics Institute Learning for Manipulation	Fall 2018
Tutor , Berkeley CS61A (Instructor John DeNero) Introduction to Structure and Interpretation of Computer Programming	Fall 2015
Lab Assistant , Berkeley CS61B (Instructor Josh Hug) Data Structures	Spring 2015

Community Service

Reviewer , IEEE ICRA, IROS, CoRL, Humanoids, RA-L, Transactions on Industrial Informatics	2016-
Cal Alumni Association , UC Berkeley Reviewer for the Leadership Award, a merit-based scholarship for undergraduates	2016
MIT-CEE Research Science Institute , Reader for student final papers	2016
AUTOLab , Robot demos for the media, news channels, faculty and industry sponsors	2014
Robotics Science & Systems (RSS) Conference , Berkeley CA Organized robotics demos for visitors in the AUTOLab.	2014
The Berkeley Project (UC Berkeley) , Site Leader Organized day-long services events in the East Bay community every semester.	2012-2015
Tau Beta Pi CA-Alpha (UC Berkeley) , Industrial Relations Officer Organized tech-talks for General Motors, Counsyl, Texas Instruments, Abbott, others	Fall 2015

Affiliations

Phi Beta Kappa Honor Society Member	2015 - present
Tau Beta Pi Engineering Honor Society Member	2013 - present
Pi Tau Sigma Mechanical Engineering Honor Society Member	2013 - present

Conference Publications

[1] Adithyavairavan Murali, Yin Li, Dhiraj Gandhi, Abhinav Gupta. **Learning to Grasp Without Seeing.** *International Symposium on Experimental Robotics (ISER)*. 2016.

[2] Adithyavairavan Murali, Lerrel Pinto, Dhiraj Gandhi, Abhinav Gupta. **CASSL: Curriculum Accelerated Self-Supervised Learning.** *International Conference on Robotics and Automation (ICRA)*. 2018.

[3] Adithyavairavan Murali*, Animesh Garg*, Sanjay Krishnan*, Florian T. Pokorny, Pieter Abbeel, Trevor Darrell, Ken Goldberg. **TSC-DL: Unsupervised Trajectory Segmentation of Multi-Modal Surgical Demonstrations with Deep Learning.** *International Conference on Robotics and Automation (ICRA)*. 2016.

[4] Adithyavairavan Murali*, Siddarth Sen*, Ben Kehoe, Animesh Garg, Seth McFarland, Sachin Patil, W. Douglas Boyd, Susan Lim, Pieter Abbeel, Ken Goldberg. **Learning by Observation for Surgical Subtasks: Multilateral Cutting of 3D Viscoelastic and 2D Orthotropic Tissue Phantoms.** *International Conference on Robotics and Automation (ICRA)*. 2015.

[5] Stephen McKinley, Animesh Garg, Siddarth Sen, Rishi Kapadia, Adithyavairavan Murali, Kirk Nichols, Susan Lim, Sachin Patil, Pieter Abbeel, Allison M. Okamura, Ken Goldberg. **A Single-Use Haptic Palpation Probe for Locating Subcutaneous Blood Vessels in Robot-Assisted Minimally Invasive Surgery.** *Conference on Automation Science and Engineering (CASE)*. 2015.

[6] Kamran Shamaei, Yuhang Che, Adithyavairavan Murali, Siddarth Sen, Sachin Patil, Ken Goldberg, Allison M. Okamura. **A Paced Shared-Control Teleoperated Architecture for Supervised Automation of Multilateral Surgical Tasks.** *International Conference on Intelligent Robots and Systems (IROS)*. 2015.

[7] Kirk A. Nichols, Adithyavairavan Murali, Siddarth Sen, Ken Goldberg, Allison M. Okamura. **Models of Human-Centered Automation in a Debridement Task.** *International Conference on Intelligent Robots and Systems (IROS)*. 2015.

[8] Jeffrey Mahler, Sanjay Krishnan, Michael Laskey, Siddarth Sen, Adithyavairavan Murali, Ben Kehoe, Sachin Patil, Jiannan Wang, Mike Franklin, Pieter Abbeel, Ken Goldberg. **Learning Accurate Kinematic Control of Cable-Driven Surgical Robots Using Data Cleaning and Gaussian Process Regression.** *Conference on Automation Science and Engineering (CASE)*. 2014.

Journal Publications

[1] Adithyavairavan Murali, Sathyan Subbiah. **A Morphological Study on Direct Polymer Cast Micro-textured Hydrophobic Surfaces.** *Surface and Coatings Technology*, 205(20), p. 4764 – 4770, 15 July 2011.

[2] Nikolai L. Yakovlev, Maxim V. Kiryukhin, Maria N. Antipina, Theo T. Susanto, Sethuraman Ravi, Adithyavairavan Murali, Gleb B. Sukhorukov. **Secondary Ion Mass Spectrometry of Macromolecules Loading in Individual Polyelectrolyte Multilayer Microcapsules.** *Australian Journal of Chemistry*, 64(9), p. 1295 – 1298, 27 July 2011.

Workshop Papers

[1] Animesh Garg*, Sanjay Krishnan*, Adithyavairavan Murali, Florian T. Pokorny, Pieter Abbeel, Trevor Darrell, Ken Goldberg. **On Visual Feature Representations for Transition State Learning in Robotic Task Demonstrations.** *Neural Information Processing Systems (NIPS) Workshop on*

"Feature Extraction". 2015.

[2] Stephen McKinley, Animesh Garg, Siddarth Sen, Rishi Kapadia, Adithyavairavan Murali, Kirk Nichols, Susan Lim, Sachin Patil, Pieter Abbeel, Allison M. Okamura, Ken Goldberg. **A Single-Use Haptic Palpation Probe for Locating Subcutaneous Blood Vessels in Robot-Assisted Minimally Invasive Surgery.** *International Conference on Robotics and Automation (ICRA) Workshop on "Shared Frameworks for Medical Robotics"*. 2015.