AKHIL PADMANABHA

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Education

Carnegie Mellon University

Ph.D. in Robotics   Started August 2021

University of California, Berkeley

B.S. in Mechanical Engineering   August 2017 - May 2021

- **Cumulative GPA:** 3.859
- **Relevant Coursework:** Introduction to Robotics, Mechatronics Design, Dynamic Systems and Feedback, Electronics for the IOT, Structure and Interpretation of Computer Programs
- Officer of Pi Tau Sigma Mechanical Engineering Honor Society

Lynbrook High School   August 2012 - June 2016

Research Experience

Graduate Researcher   August 2021 - Present

Robotic Caregiving and Human Interaction Lab and Soft Machines Lab – Pittsburgh, PA

- Working on wearable devices for itch tracking in eczema patients.
- Additionally mentoring undergraduates and masters' students on assistive robotics projects.
- Co-advised by Professor Zackory Erickson and Professor Carmel Majidi.
- Funded by National Science Foundation Graduate Research Fellowship.

Visiting Researcher   August 2020 – December 2020

RoboTouch Lab at Carnegie Mellon University – Pittsburgh, PA

- Led tactile sensing project under Prof. Wenzhen Yuan and mentored another student.
- Completed prototype of a tactile sensor for robotic manipulation and teleoperation tasks.

Undergraduate Researcher   November 2019 - Present

Berkeley Emergent Space Tensegrities Lab (BEST) at UC Berkeley – Berkeley, CA

- Second author on paper published at the International Conference on Robotics and Automation (ICRA) 2021.
- Contributing to Human Robot Interaction (HRI) project involving tensegrity robots under Prof. Alice Agogino.
- Responsible for data collection, feature engineering, and implementing machine learning algorithms in scikit-learn.

Undergraduate Researcher   February 2019 - June 2020

Robotic Artificial Intelligence and Learning Lab (RAIL) at UC Berkeley – Berkeley, CA

- First author on paper published at the International Conference on Robotics and Automation (ICRA) 2020.
- Solely responsible for electromechanical design of a novel optical tactile sensor, OmniTact, under Prof. Sergey Levine.
- Designed flexible and rigid PCBs using Autodesk Eagle and mechanical components using Solidworks.
- Utilized several manufacturing processes including silicone casting, SLA/FDM 3D printing, waterjet cutting, reflow soldering, etc.

Publications

A. Barkan, **A. Padmanabha**, S. Tiemann, A. Lee, M. Kanter, Y. Agarwal, and A. Agogino, "Force-Sensing Tensegrity for Investigating Physical Human-Robot Interaction in Compliant Robotic Systems," *2021 IEEE International Conference on Robotics and Automation (ICRA).*

A. Padmanabha, F. Ebert, S. Tian, R. Calandra, C. Finn and S. Levine, "OmniTact: A Multi-Directional High-Resolution Touch Sensor," *2020 IEEE International Conference on Robotics and Automation (ICRA)*, Paris, France, 2020, pp. 618-624, doi: 10.1109/ICRA40945.2020.9196712.

Honors and Awards

NSF Graduate Research Fellowship
- Recognizes and supports outstanding graduate students in NSF-supported STEM disciplines who are pursuing research-based master's and doctoral degrees at accredited US institutions.
- Includes three years of financial support including an annual stipend of $34,000 and a cost of education allowance of $12,000 to the institution.

Dean's List (Spring 2018, Fall 2019)
- Awarded to the top 10% of undergrads in each college based on GPA.

Honors to Date (Spring 2018, Fall 2018, Spring 2019, Fall 2019)
- Awarded to the top 20% of undergrads in each college based on GPA.

3D Hubs $1000 Student Grant Award
- Five grant winners were chosen out of nearly two hundred project submissions.

Professional Experience

Associate Engineer   May 2021 - August 2021

SpaceX – Cape Canaveral, Florida
- Responsible for full upgrade of control software and codebase for Of Course I Still Love You droneship.
- Contributed to various controls-related projects for Falcon 9 Booster Recovery Team.
- Traveled to Port Fourchon, Louisiana for build of A Shortfall of Gravitas droneship and Los Angeles, California for testing on Of Course I Still Love You droneship.

Launch Intern   June 2020 - August 2020

SpaceX – Boca Chica, Texas
- Responsible for deployment of robot dogs for post rocket launch operations.
- Received full-time return offer at the end of summer.
- Led and contributed to rocket launch operations for the Starship mission to Mars.

Engineering Intern   May 2018 - January 2019

ViaBot – Palo Alto, CA
- Offered full-time position from the company at the end of summer.
- Traveled to Shenzhen, China with team to work on Version 2 of autonomous modular robot for outdoor tasks.
- Responsible for designing large assemblies and fabricating prototypes for robot dock, sweeper module, robot lid, etc.

- Regularly utilized CAD (Solidworks), 3D printing, Arduino, and machining on the job.
- Assisted with VC demos, pilot at major tech company in the Bay Area, and HAX hardware accelerator events.

Other Experience

Robobears – Berkeley, CA

Advisor   June 2019 - Present

President   June 2018 - May 2019
- Led premier robotics club at UC Berkeley with over 20 members and mentored three groups of students building 3lb battlebots.
- Solely organized first Cal Combat Robotics Competition involving universities from across the nation.
- Restructured organization of club and introduced new projects, application process, fundraising, and outreach.

Engineer   August 2017 - May 2018
- Singlehandedly designed, machined, and assembled a 3lb battlebot and competed at the International Robogames Competition.

3D Printing Volunteer   March 2020 – May 2020

Shield the Bay – Berkeley, CA
- Assisted with 3D printing efforts for PPE producing organization during the COVID-19 pandemic.
- Organized other 3D printing volunteers to enable steady supply of face shields to Alameda County hospitals.

Design Fellow   August 2019 - May 2020

UC Berkeley Fung Fellowship for Wellness and Technology Innovations – Berkeley, CA
- Collaborated with a diverse cohort to solve public health challenges using technology.
- Utilized human-centered design principles to conduct user research and prototype solutions for industry partners.