

JESSICA YIN

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EDUCATION

University of Pennsylvania

August 2020 - Present

PhD. in Mechanical Engineering and Applied Mechanics

Advisors: James Pikul and Mark Yim

National Science Foundation Graduate Research Fellow, 2020 - Present

Carnegie Mellon University

August 2016 - May 2020

B.S. in Mechanical Engineering

Minor in Physical Computing from School of Computer Science

Advisors: Carmel Majidi and Tess Hellebrekers

Dean's List (GPA 3.75+): Spring 2018, Fall 2018, Spring 2019, Fall 2019, Spring 2020

PUBLICATIONS

“Sim2real2sim Transfer of Compliant Three-Axis Tactile Sensors for Dexterous, In-Hand Translation”
J. Yin, H. Qi, J. Malik, J. Pikul, M. Yim, and T. Hellebrekers. *In Preparation, 2024.*

“Towards an AI-driven soft toy for automatically detecting and classifying infant-toy interactions using optical force sensors”

R. Udayagiri, **J. Yin**, Xinyao Cai, W. Townsend, V. Trivedi, R. Shende, F. Sowande, L. Prosser, J. Pikul, and M. Johnson. *Frontiers in AI and Robotics 2024.*

“Proximity and Visuotactile Point Cloud Fusion for Contact Patches in Extreme Deformation”

J. Yin, P. Shah, N. Kuppuswamy, A. Beaulieu, A. Uttamchandani, A. Castro, J. Pikul, and R. Tedrake. *Under Review for IEEE Robotics and Automation Letters.*

“Electroadhesive Clutches for Programmable Shape Morphing of Soft Actuators”

G.M. Campbell, **J. Yin**, Y. Song, U. Gandhi, M. Yim, and J. Pikul. *IEEE International Conference on Intelligent Robots and Systems (IROS) 2022.*

“Multimodal Proximity and Visuotactile Sensing With a Selectively Transmissive Soft Membrane”

J. Yin, G.M. Campbell, J. Pikul, and M. Yim. *IEEE International Conference on Soft Robotics (RoboSoft) 2022. Best Student Paper Award.*

“Contact force estimation from deformation of Surface”

K.E. Kim, **J. Yin**, G.M. Campbell, J. Pikul, and C. Santangelo. *APS March Meeting 2022.*

“Wearable Soft Technologies for Haptic Sensing and Feedback”

J. Yin, R. Hinchet, H. Shea, and C. Majidi. *Advanced Functional Materials 2021.*

“Closing the Loop with Liquid-Metal Sensing Skin for Autonomous Soft Robot Gripping”

J. Yin, T. Hellebrekers, and C. Majidi. *IEEE International Conference on Soft Robotics (RoboSoft) 2020.*

“Real-Time Visualization of Neural Network Training to Supplement Machine Learning Education”

M. You and **J. Yin**. *IEEE Integrated STEM Education Conference (ISEC) 2019.*

“Liquid Metal-Microelectronics Integration for a Sensorized Soft Robot Skin”

T. Hellebrekers, K.B. Ozutemiz, **J. Yin**, and C. Majidi. *IEEE International Conference on Intelligent Robots and Systems (IROS) 2018.*

WORK EXPERIENCE

Meta: Fundamental AI Research (FAIR) <i>AI Research Scientist Intern</i>	June 2023 - January 2024
Toyota Research Institute <i>Dexterous Manipulation Research Intern</i>	Summer 2022
MIT Lincoln Laboratory: Rapid Prototyping Group <i>Robotics Research Intern</i>	Summer 2019
Carnegie Mellon University: Soft Machines Lab <i>Undergraduate Researcher</i>	Summer 2017 - Fall 2020
Procter & Gamble: R&D Packaging Development <i>R&D Engineering Intern</i>	Summer 2018

PATENTS

Collapsible Protrusions Having a Variable Coefficient of Friction

Filed by Toyota Research Institute (2022), Patent Pending

Inventors: A. Beaulieu, N. Kuppuswamy, **J. Yin**

Deformable Sensors Having an Internal Stereo Depth Sensor and An Infrared Sensor

Filed by Toyota Research Institute (2022), Patent Pending

Inventors: A. Beaulieu, N. Kuppuswamy, **J. Yin**

Multimodal Proximity and Visuo-tactile Sensing Through Transmissive Membrane

Filed by University of Pennsylvania (2022), Patent Pending

Inventors: J. Pikul, **J. Yin**, M. Yim

HONORS AND AWARDS

IEEE Robosoft 2022 Best Student Paper Award	Spring 2022
NSF Graduate Research Fellowship (Computer Vision & Robotics)	Fall 2020 - Present
CMU Undergraduate Excellence in Research Award	Spring 2020
CMU University Honors	Spring 2020
CMU College of Engineering Honors	Spring 2020
CMU Mechanical Engineering Department Honors	Spring 2020
CMU Dean's List (GPA 3.75+)	Spring 2018 - Spring 2020
CMU Mechanical Engineering Best Overall Capstone Project	Fall 2019
Society of Women Engineers Research Poster 3rd Place, Top 10 National Finalist	Fall 2018
HackPrinceton Top 10 Finalist & 1517 Fund Young Founders' Award	Spring 2018
HackPrinceton Top 10 Finalist	Fall 2017
HackCMU Best Data Hack by Yahoo!	Fall 2016

LEADERSHIP AND ACTIVITIES

Lead Teaching Assistant, Penn Introduction to Scientific Computing	Spring 2023
Lead Teaching Assistant, Penn Junior Design	Spring 2022
Co-Lead Teaching Assistant, Penn Statics and Strength of Materials	Fall 2021
Treasurer, Penn Mechanical Engineering Graduate Association	Fall 2021
Project Mentor, Penn GRASP AI4All	Summer 2021
Grader, CMU Dynamic Systems and Controls	Spring 2020
Executive Board, Alpha Kappa Psi Business Fraternity	Fall 2018-Spring 2019
Teaching Assistant, CMU Introduction to Machine Shop	Spring 2018
Makerspace Technician, CMU Mechanical Engineering	Fall 2018-Spring 2018

MENTORED STUDENTS

Arundhati P., High School Senior Project: "Soft Self-Propelled Cardiac Catheter for Medical Use"	June 2021 - September 2021
Calista H., High School Sophomore Project: "How can a wearable electronic garment be used to monitor and improve back posture?"	August 2021 - February 2022
Sheri Z., High School Junior Project: "Fix the K12 STEM Pipeline"	October 2021 - February 2022
Rhea V., High School Senior Project: "Design and control of 3D printed, actuated prosthetic hands"	June 2022 - November 2022
Ayanav R., Penn B.S. Project: "Data Pipeline for Capturing 3D Point Clouds of a Silicone Elastomer Membrane"	November 2021 - June 2022