Jasmin E. Palmer, Ph.D.

jasminp@alumni.stanford.edu ● LinkedIn ● ORCID ● Google Scholar ● Website

EDUCATION:

Stanford University, *Doctor of Philosophy in Mechanical Engineering* — September 2019 – June 2025
Stanford University, *Master of Science in Mechanical Engineering* — September 2019 – January 2021
Massachusetts Institute of Technology (MIT), *Bachelor of Science in Mechanical Engineering* — June 2015 – June 2019

EXPERIENCE:

Stanford University – Collaborative Haptics and Robotics in Medicine (CHARM) Lab, September 2019 – June 2025
Doctoral Researcher
Principal Investigator: Dr. Allison M. Okamura

- Developed a virtual environment via the CHAI3D haptics and simulation framework along with a 1-DoF wrist-worn tactile haptic device to enhance manipulation capabilities for training and remote operations
- Conducted a user study investigating how various mappings between fingers and haptic actuators affect task performance
- Designed and executed a second user study resulting in two main contributions:
  - Presented the design and characterization of a novel, soft, 3D-printed pneumatically actuated wrist-worn device.
  - Demonstrated that relocated haptic feedback while wearing such a device significantly reduces virtual grasping forces up to 17% on the index finger and 15% on the thumb compared to no haptic feedback
- Performed psychophysical studies to quantify human sensitivity thresholds for stimuli from wrist- and finger-worn devices and compare perception at the wrist, index finger, and thumb in multiple degrees of freedom.

Johns Hopkins University Applied Physics Laboratory, *GEM Engineering Ph.D. Fellowship Intern* — June 2019 – August 2019

- Updated and rebuilt mobile platform of the Bimanual Dexterous Robotic Platform (AKA RoboSally)
- Conceptualized and prototyped designs for handheld devices to address traumatic intracranial hemorrhages in non-hospital setting

MIT Media Lab – Biomechatronics Group, *Undergraduate Researcher* — September 2018 – May 2019
Principal Investigator: Dr. Hugh Herr

- Developed a novel passive mechanical metatarsophalangeal (MTP) joint for powered ankle-foot prostheses to improve mobility of transtibial amputees
- Protoyped and evaluated four MTP joint models with varying joint designs and heel geometries; conducted structural simulations using SolidWorks finite elements analysis (FEA) tools to assess expected loads during gait.

Johns Hopkins University – Photoacoustic and Ultrasonic Systems Engineering (PULSE) Lab, June 2018 – August 2018
Undergraduate Researcher
Principal Investigator: Dr. Muyinatu (Bisi) Bell

- Designed tools for autonomous robotic visual servoing of scissor locations during photoacoustic-guided liver surgery
- Presented a research poster at the Leadership Alliance National Symposium and Johns Hopkins Summer Research Symposium

MIT d'Arbeloff Laboratory for Information Systems and Technology, September 2017 – February 2018
Undergraduate Researcher
Principal Investigator: Dr. Harry Asada

- Designed custom printed circuit boards (PCBs) in EAGLE to upgrade electronic systems of a multi-tier robotic arm
- Assessed mechanical design requirements to support functional improvements and structural integrity of the robotic arm

University of Southern California – Polymorphic Robotics Lab, *Undergraduate Researcher* — June 2017 – August 2017
Principal Investigator: Dr. Weimin Shen

- Developed code for a forward-motion gait on a reconfigurable robot
- Repaired hardware on reconfigurable robot modules and related machinery

TECHNICAL SKILLS:

- **Programming**: MATLAB, C#, C++, Python, Java, C
- **Software:** Microsoft Office Suite, SolidWorks, CHAI3D, Unity3D, QT Creator, Fusion 360
- **Machine Shop:** FDM and SLA 3D printing, Laser cutter, Drill Press, Soldering, Water jet, Mill, Lathe, Hand Tools

PUBLICATIONS (selected 2 of 4):

1. **J. E. Palmer**, B. B. Vuong, Z. Zhakypov, Y. Qin, L. Tilton and A. M. Okamura, "Haptic Relocation of Virtual Finger Forces via Pneumatic Wrist-Worn Haptic Devices," *2024 IEEE Haptics Symposium (HAPTICS)*, Long Beach, CA, USA, 2024, pp. 315-320, doi: 10.1109/HAPTICS59260.2024.10520855. https://ieeexplore.ieee.org/abstract/document/10520855
2. **J. E. Palmer**, M. Sarac, A. A. Garza and A. M. Okamura, "Haptic Feedback Relocation from the Fingertips to the Wrist for Two-Finger Manipulation in Virtual Reality," *2022 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Kyoto, Japan, 2022, pp. 628-633, doi: 10.1109/IROS47612.2022.9981392. https://ieeexplore.ieee.org/abstract/document/9981392