Devin Murphy

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Education

University of Washington
Ph.D Candidate, Electrical & Computer Engineering — Sept 2025
- Advised by Yiyue Luo and Akshay Gadre

Massachusetts Institute of Technology
M.Eng, Electrical Engineering and Computer Science, GPA: 5.0/5.0 — Feb 2024 - May 2025
- Advised by Wojciech Matusik and Paul Pu Liang

B.Sc, Electrical Engineering and Computer Science, GPA: 4.9/5.0 — Sept 2018 – May 2022

Publications

D. Murphy, J. Zhu, P. Liang, W. Matusik, and Y. Luo. WiReSens Toolkit: An Open-source Platform towards Accessible Tactile Sensing, submitted to ACM UIST 2025

D. Murphy, Y. Li, C. Owens, L. Stanton, Y. Lee, P. Liang, Y. Luo, A. Torralba, W. Matusik. Fits like a Flex-Glove: Automatic Design of Personalized FPCB-Based Tactile Sensing Gloves. CHI EA'25

D. Murphy*, J. Moralejo*, P. Liang. CalPal: An Intelligent Multimodal Digital Wall Calendar. Mixed Initiative Next-gen Design Workshop, IUI 2025

Awards and Honors

UW College of Engineering Dean's Fellowship	2025
UW Rushmer Electrical Engineering Endowment Fellowship	2025
MIT EECS Distinguished Engineering Fellowship	2025
Point Foundation Flagship Scholarship - Semifinalist	2025
MIT Arts Scholar	2020-2022
MIT HKN and TBP Eligible	2021
Bausch and Lomb Honorary Science Award	2018
Rensselaer Medal	2018

Invited Talks

Cambridge Science Festival, "Electric Skin: Wearable Tech and the Future of Fashion", September 2024

Teaching

Teaching Assistant: Biomedical Signal and Image Processing — Feb 2024 - May 2024
- Digital Signal Processing as it relates to biomedical applications, including digital filtering, spectral analysis, linear predictive coding, image segmentation and reconstruction, random signals. Led lab sections, office hours, and developed course material.

Lab Assistant: Circuits and Electronics — Feb 2019 - May 2022
- Staffed lab and office hour sections, answering questions about homework, helping debug hardware, and assisting with lab tools (oscilloscopes, function generators, power supplies)

Experience

Research Assistant — *Cambridge, MA*
MIT Computer Science and Artificial Intelligence Laboratory — *May 2024 – Present*
- Developed open-source firmware libraries and designed custom circuitry for resistive matrix-based tactile sensing systems. Implemented wireless communication protocols (Wi-Fi, Bluetooth Low Energy, ESP-NOW), auto-calibration techniques, and optimized for low-power operation.
- Engineered multi-threaded Python libraries for real-time data recording and visualization across multiple tactile sensing devices.
- Developing Flexible Printed Circuit Board (FPCB) template and automated design and manufacturing pipelines for custom tactile sensing gloves

Quality Engineer — *Natick, MA*
MathWorks — *Sep 2022 – Feb 2024*
- Provided technical support for MATLAB and Simulink on over 50 customer cases

- Created full stack web applications from scratch to track MATLAB Online/MATLAB Home performance
- Expanded team's testing infrastructure significantly by designing and implementing pipelines for High Availability, Scalablity, and Performance testing

Software Engineer Intern *London, United Kingdom*
Yoto *June 2022 – Aug 2022*

- Designed and implemented a new "Yoto Weather" feature, providing kid-friendly weather forecasts based on the location of the player.
- Built API's using AWS, Serverless, Python, and FFMPEG that allowed for the creation and combination of a wide range of weather forecast audio.
- Created a website for the weather feature as an internal tool for content designers to iterate and collaborate on the weather forecast content.

Undergraduate Research Assistant *Cambridge, Massachusetts*
MIT Media Lab - Opera of the Future *June 2021 – May 2022*

- Performed signal analysis of wind audio recorded with contact microphones using Python, and designed and implemented an accelerometer microphone to record wind as it interacts with a silicone membrane using C++
- Implemented TCP communication protocol between outdoor accelerometer microphone and indoor sculpture in C++ and Python, as well as a solar power system for the accelerometer microphone.
- Iterations of the sculpture using the base technical infrastructure I helped develop have been deployed at the Transmediale Festival 2023 (Berlin), and the Shanghai Ming Contemporary Art Museum.

Undergraduate Research Assistant *Cambridge, Massachusetts*
MIT Media Lab - Lab for Social Machines *Sep 2019 – Aug 2020*

- Used Python to analyze the Storyblocks app search feature usage and categorize an icon set (2300 + icons) based on their semantic relation to each other, improving the feature by making recommendations for icons to add or remove.
- Designed a more culturally inclusive set of icons for Storyblocks utilizing Unity/C# and the Flaticon API.

Mentorship and Volunteering

Project-Based Mentorship

- Layla Stanton (Undergraduate) - MIT. Jan 2022.

Freshman Leadership Program
Counselor

- Developed and coordinated activities that aim to help incoming MIT freshman develop as leaders.

Leadership Training Institute
Student Mentor

- Assisting Boston-area high school students in brainstorming and implementing their own community service project.

Technologies

Languages: C++, Python, MATLAB, JavaScript, GoLang, SystemVerilog

Technologies: ESP Microcontrollers, Bluetooth, FPGA (Vivado), KiCad, Digital Embroidery, NextJS, Pytorch