KATELYN LEE

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katelynlee.github.io

EDUCATION

Columbia University • *New York, NY* expected May 2028

- *M.S./Ph.D track candidate in Mechanical Engineering*
- GPA : 3.96/4.0 | Relevant Coursework: Applied Deep Learning, Mechatronics, Robot Learning (A), Intro to Robotics (A), Applied Robotics (A-), Control Theory (A+), Advanced Machine Dynamics (A-)

California Institute of Technology • *Pasadena, CA* Class of 2023

- *B.S. in Biological Engineering, Tau Beta Pi (inducted Apr. 2022)*
- GPA : 4.1/4.0 | Relevant Coursework: Experimental Robotics (A+), Design and Construction of Biodevices (A), Differential Equations (A+), Partial Differential Equations (A+), Probability and Statistics (A+)

Trinity School • *New York, NY* Class of 2019

- GPA : 3.96/4.0, graduated cum laude | Varsity Cross Country, Indoor Track, and Outdoor Track Captain

RESEARCH

Robotic Manipulation and Mobility Lab • *Columbia* since Fall 2023

MyHand | *A wearable, active robotic device to assist hand movement for stroke survivors*

- performed kinematic analysis of finger movement to calculate joint angles via 6 DoF sensors
- created data analysis pipelines for calculating finger stiffness values and visualizing results
- developing novel fabric sEMG sensors for measuring muscle activity of intrinsic hand muscles
- designing new finger splints for improved user experience while wearing the device

PUBLICATIONS & WORKSHOPS

Conference Publication

A. Chen*, **K. Lee***, L. Winterbottom, J. Xu, C. Lee, G. Munger, A. Deli-Ivanov, D. M. Nilsen, J. Stein, and M. Ciocarlie, "Volitional Control of the Paretic Hand Post-Stroke Increases Finger Stiffness and Resistance to Robot-Assisted Movement." In 2024 IEEE RAS/EMBS Intl. Conference on Biomedical Robotics and Biomechatronics (BioRob).

Workshop Contribution

K. Lee, L. M. DiSalvo, I. Xu, A. Chen, X. Zhou, and M. Ciocarlie. "Fabric EMG Sensing for Robotic Orthosis Control." In 2024 BioRob workshop: Building Responsive Body-Machine Interfaces with Biosignals and Robotic Exoskeletons

EXTRACURRICULAR & INTERESTS

Lloyd House Executive Committee • *President ('22-'23), Social Director ('21-'22)* Winter 2021 - Winter 2023

Teaching Assistant • *Bi 1: The Great Ideas of Biology (Spring 2023)*, *BE 150: Biological Circuit Design (Spring 2022)*

Fluid Dynamics a capella • *Soloist at Dec. 2019 and Mar. 2020 concerts* Fall 2019 - Spring 2023

Varsity Track & Field • *Top 10 All Time in the 800m at Caltech* Fall 2019 - Spring 2020

SKILLS & AWARDS

skills • Python (pandas, pytorch), ROS, C, Matlab, Arduino, SQL | SolidWorks, DipTrace, 3D print, laser cut, solder

awards

- Studenski Memorial Award winner for fully-funded, 1 month homestay at a Japanese farm (Summer 2023)
- 2nd place in Vodopia-Hasson poster competition at SURF Seminar Day (Aug. 2020)
- Caltech Art of Science : 2nd Place for $450 prize (2020), 3rd Place for $300 prize (2021)
- interviewed by Conan O'Brien on *Conan O'Brien Needs a Fan* podcast, episode "Don't Sit on Wet Grass" (May 2021)