KATELYN LEE

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EDUCATION

Columbia University • *New York, NY* Expected 2028

Ph.D candidate in Mechanical Engineering | M.S. conferred May 2025

- **NSF Graduate Research Fellow (GRFP), awarded 2025**
- GPA : 3.98/4.0 | Relevant Coursework: Applied Deep Learning, Robot Learning, Applied Robotics, Intro to Robotics

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, Design and Construction of Biodevices
- **Lloyd House Executive Committee** • ***President*** *('22-'23), Social Director ('21-'22)*
- **Teaching Assistant** • *The Great Ideas of Biology (Spring 2023)*, *Biological Circuit Design (Spring 2022)*
- 2nd place in Vodopia-Hasson poster competition at SURF Seminar Day (Aug. 2020)

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

SKILLS

- software: Python (NumPy, Pandas, scikit-learn, PyTorch, bokeh), ROS, ROS 2, Arduino, LaTeX, C, Matlab, SQL
- hardware: SolidWorks, Adobe Illustrator, DipTrace, 3D printing (FDM, SLA), laser cutting, soldering

EXPERIENCE

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

- Developing a 7 DoF two finger hand and exoskeleton for force-feedback teleoperation and autonomous manipulation
- Kinematic optimization of dexterous hand design using 6 DoF human finger biomechanics data with MuJoCo
- Coded data analysis and visualization scripts in Python to compute kinematic transformations and regression analyses
- Directly mentored 9 undergraduates and master's students in research projects
- Re-designed a wearable hand orthosis for stroke survivors to improve donning time by over 200%

Pachter Lab • *Caltech* Fall 2022 - Spring 2023

- Improved usability and design for an open-source compact fractional collector

Ingber Lab • *Wyss Institute, Harvard Systems Biology Summer Internship* Summer 2022

- Optimized lentiviral production assay for increased infection and gene knock down in hematopoietic stem cells

Sustainable Orchard Farming • *Minami-Alps, Yamanashi Prefecture, Japan* Summer 2023

- Awarded Studenski Memorial Award from Caltech Y for one month cultural exchange in Japan as a Korean-American

PUBLICATIONS

K. Lee et al., "Fabric Sensing of Intrinsic Hand Muscle Activity," 2025 International Conference On Rehabilitation Robotics (ICORR), Chicago, IL, USA, 2025, pp. 1233-1238, doi: 10.1109/ICORR66766.2025.11062938.

A. Chen*, **K. Lee***, et. al., "Volitional Control of the Paretic Hand Post-Stroke Increases Finger Stiffness and Resistance to Robot-Assisted Movement," 2024 10th IEEE RAS/EMBS International Conference for Biomedical Robotics and Biomechatronics (BioRob), Heidelberg, Germany, 2024, pp. 1670-1675, doi: 10.1109/BioRob60516.2024.10719809.

EXTRACURRICULAR & INTERESTS

- A capella | Varsity Track & Field (NCAA) | Photography (Won $750 in Caltech Art of Science Prizes)
- Interviewed by Conan O'Brien on *Conan O'Brien Needs a Fan* podcast, episode "Don't Sit on Wet Grass"