

EDUCATION

Harvey Mudd College (HMC) <ul style="list-style-type: none">B.S. in Computer Science	Claremont, CA	Aug 2022 – May 2026
Seattle Academy High School (SAAS) <ul style="list-style-type: none">High School Diploma, High Honor Roll	Seattle, WA	Jan 2019 – June 2022

EMPLOYMENT

Summer 2023	Audio Information Retrieval	Prof Tsai, MIR Lab, Harvey Mudd College
Goal: To train large language models to understand and classify music data; Audio tampering detection <ul style="list-style-type: none">Developed novel online alignment algorithms for 3 way audio alignment of piano concertosLead data collection and created new audio tampering detection systemsTwo publications in preparation		
2020-2022	Robotic Tele-Operation	Prof. Cakmak, HCR Lab, University of Washington
Goal: To develop accessible robot tele-operation interfaces <ul style="list-style-type: none">Performed data analysis of user studies [IEEE RO'MAN 2021 Paper].Led interface design and studies of interface alternatives. Co-first authored [IEEE IROS 2021 Co-First Authored Paper].Led research in programming by demonstration & human-in-the-loop object grasping and manipulation approachMentored 5 undergraduates across 3 different projects		

OTHER INTERNSHIPS AND RESEARCH

2023	Embedded Programming	Prof. Spencer, ACE Lab, HMC
Goal: Revise and test ultrasonic beam forming sonar sensor. Led low level embedded development on SAM-4 MCU. Implemented embedded communication protocol for talking to an Ethernet chip using SPI		
2022	Zero-shot Image Classification	Prof. Carr-Markell, Bee Lab, HMC
Goal: Pollen detection and classification (translational ML work with biologists) <ul style="list-style-type: none">Trained zero shot classifier using Siamese Net & ResNet transfer learning.Developed public website to share the model and blog post explaining the basics of siamese nets and auto encoders.		
2020-2021	Full Stack Web Development	WA State Hospital Association
Goal: Develop custom Personal Protective Equipment exchange website to help address COVID shortages. Engineered custom PPE-Distribution algorithm with input from MultiCare Hospital.		
2019	Deep Learning	Prof. Froehlich, Makeability Lab, UW
Goal: Integrate deep learning into curb-ramp detection to improve temporal tracking of sidewalk quality to improve transparency about sidewalk accessibility [ACM ASSETS 2021 Poster]		
2018	Voice Activity Detection	Adobe
Goal: Develop ultra-lightweight ML speech detection classifier for Character Animator. Added to developer credits		

PUBLICATIONS

References

- Maria E. Cabrera, Tapomayukh Bhattacharjee, **Kavi Dey**, and Maya Cakmak. An exploration of accessible remote tele-operation for assistive mobile manipulators in the home. In *30th IEEE RO-MAN*, pages 1202–1209. IEEE, '21. doi: 10.1109/RO-MAN50785.2021.9515511. URL <https://doi.org/10.1109/RO-MAN50785.2021.9515511>.
- Maria E. Cabrera*, **Kavi Dey***, Kavita Krishnaswamy, Tapomayukh Bhattacharjee, and Maya Cakmak. Cursor-based robot tele-manipulation through 2d-to-se2 interfaces. In *IEEE/RSJ IROS*, pages 4230–4237. IEEE, '21. doi: 10.1109/IROS51168.2021.9636008. URL <https://doi.org/10.1109/IROS51168.2021.9636008>. ***Co First Authors**.
- Ather Sharif, Paari Gopal, Michael Saugstad, Shiven Bhatt, Raymond Fok, Galen Weld, **Kavi Dey**, and Jon E. Froehlich. Experimental crowd+ai approaches to track accessibility features in sidewalk intersections over time. In Jonathan Lazar, Jin-juan Heidi Feng, and Faustina Hwang, editors, *ASSETS Adjunct Proceedings*, pages 65:1–65:5. ACM, '21. doi: 10.1145/3441852.3476549. URL <https://doi.org/10.1145/3441852.3476549>.

SIGNIFICANT PROJECTS

2020-2023

Electronic Speed Control (ESC) Design

SAAS

Goal: Design and manufacture custom brushless motor ESC. Led team (3 high school students); Taught college level electrical engineering and brushless motor control theory, schematic design, PCB design, microcontroller programming

2019-2022

Team Lead; ECE Lead

MATE & FRC Robotics, SAAS

Goal: Build for and compete in national robotics competitions

- Led 30+ person team in remote and in person settings with focus on culture, education and diversity
- Developed multi-node realtime communication system and UI, enhanced documentation and process, led team effort to build underwater robot.

LANGUAGES AND TECHNOLOGIES

- **Expert:** Python, Typescript, Svelte, Pytorch, Pandas/Matplotlib
- **Intermediate:** THREE.js, C++, ROS, Unix, Compiler Design, LaTeX, Verilog
- **Engineering:** Schematic Capture, Board Layout, Altium, I2C, Trapezoidal and Field-Oriented ESC Design, PIC Programming, MOSFETs, Solidworks
- **Advanced studies including:** Proof Based Real Analysis; Linear Algebra; Multivariable Calculus; Quantum Theory; Inverse Kinematics; Optimization; Machine Learning

ADDITIONAL EXPERIENCE AND AWARDS

2022 **Harvey S. Mudd Merit Award**

2021 **World Championship Top 10** MATE Telepresence Competition

2020 **Rookie All Star Award**, FRC: Redshift 8032

2020 **FRC Dean's List Semi-Finalist**

2018 **Regional Competition Top 5** MATE Pacific Northwest Region