KEVIN MARX

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Education

Stanford University, Electrical Engineering M.S. **Stanford, California**
GPA: 3.8 *September 2022 – March 2024*
Coursework: Signal Processing for Machine Learning, Machine Learning on Embedded Systems, Analog-Digital Interface Circuits, 3D+ Imaging Sensors, Advanced Topics in Power Electronics, Data Transmission Design, 3D Bioprinting Laboratory, Computational Molecular Biology, Autonomous Implantable Systems, Biochips and Medical Imaging, Project Management

California Institute of Technology, Electrical Engineering B.S. **Pasadena, California**
GPA: 3.8 *October 2018 – June 2022*
Coursework: Analog Circuit Design, Analog Electronics Project Laboratory, Feedback and Control Circuits, High Frequency Systems Laboratory, Electromagnetic Engineering, Learning Systems, Advanced Digital Systems Design, Digital Circuit Design with FPGAs and VHDL, Practical Electronics for Space Applications, Design and Construction of Biodevices

Work Experience

Stanford **Stanford, California**
Research Assistant at Prakash Lab *July 2022– December 2023*
- Wrote and tested a microscope image analysis pipeline to focus-stack, segment, and identify cells in an image for research
- Added features to fluid-handling CODEX robot for use in fully automated multichannel imaging experiments
- Trained and deployed cell segmentation machine learning models on resource-constrained single-board Linux computers for infectious disease diagnostics in real time
- Wrote generic stepper motor drivers used in several different products currently used in research labs around the world
- Created a web-based dashboard for inspecting the quality of hundreds of blood smears down to the cellular level

Caltech **Pasadena, California**
Undergraduate Researcher at Pachter Lab *June 2021– April 2022*
- Modeled, 3D-printed, tested, and iterated on designs for a low cost and open source syringe pump which is 1/20th the cost of commercially available syringe pumps for use in laboratory settings
- Wrote and documented firmware for precise PID feedback motor control and fluid control for the syringe pump

Caltech **Pasadena, California**
Undergraduate Researcher at Emami Lab *June 2020– September 2020*
- Developed and tested a low cost wearable core body temperature thermometer using a novel temperature sensor

Caltech **Pasadena, California**
Teaching Assistant for Design and Construction of Biodevices *October 2021– December 2021*
- Debugged, graded, and provided feedback for students so they can succeed in the class
- Led office hour sessions covering extra topics in electrical engineering for biology and bioengineering students

Princeton Plasma Physics Laboratory **Princeton, New Jersey**
Plasma Detection and Data Analyst Intern *August 2017 – August 2018*
- Created LabView Virtual Instruments for recording pressure, distance, and voltage data in the Remote Glow Discharge Experiment (RGDX) and analyzed current, voltage, pressure, and light to detect plasma in the experiment using Javascript
- Designed and 3D printed supports using SolidWorks to improve reliability of electrode movement structure in the RGDX

Leadership Experience

Caltech **Pasadena, California**
Dabney House Vice President and Treasurer *April 2021– April 2022*
- Managed $15,000 termly income, allocated funds for unexpected expenses from return-to-campus after COVID quarantine, funded regular Dabney House social events, and led $17,000 lounge renovation proposal with student feedback
- Trained as an Emergency Medical Responder to provide medical care to students with minor injuries and interface between students and paramedics during serious medical emergencies

Skills

Programming Languages: C, C++, Arduino, VHDL, ABEL, MATLAB, Mathematica, Javascript, Swift, R, Python
Computer Programs: Git, SolidWorks, Fusion 360, Altium, KiCad, LTSPICE/TINA, Quartus, Xilinx ISE, LabView, Microwave Office, Cadence Virtuoso
Miscellaneous: Surface mount and through-hole soldering, PCB design and assembly, budgeting, sewing and embroidery