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| EDUCATION | Massachusetts Institute of Technology , Cambridge, MA <i>Master of Engineering</i> , Neuroengineering, June 2025 GPA: x.xx <i>Bachelor of Science</i> , Electrical Engineering and Neuroscience, June 2023 GPA: 3.63 |
| RESEARCH FOCUS | Neural Fiber Development, Neural Recording, Brain-Machine Interfaces |
| EXPERIENCE | <div><div>Graduate Researcher Cambridge, MA Conducted in-vivo neurosurgery of rats for implantation of electrodes. Conducted 10-micron brain-slicing of in-vitro rat brains. Constructed and soldered silver dual-wire electrodes for implantation.</div><div>Bioelectronics Laboratory August 2023 - Present</div></div> <div><div>Undergraduate Research Assistant Cambridge, MA Developed a generalized linear machine learning model using lasso regression and trained a binomial classifier on MEG data provided by University College London researchers.</div><div>Affective Brain Lab August 2022 - December 2022</div></div> <div><div>Hardware Developer Intern Poughkeepsie, NY Developed a comprehensive library of IC timers, SOICs, DIPs, temperature sensors, and other circuits utilized in industry-ready cards featured in the IBM Z Metis Main-frame through Cadence Allegro PCB Design software.</div><div>IBM June 2022 - August 2022</div></div> <div><div>Undergraduate Research Assistant Cambridge, MA Designed physical configuration of the AttentivU EEG hardware through soldering, computer-aided design, and electrical validation testing.</div><div>MIT Media Lab December 2021 - May 2022</div></div> |
| PROJECTS | <p>Preserving Axon Signal Transmission (Neuroengineering Research Project): Conducted literature research on preserving axon signal transmission post-lesion formation in the central nervous system; Proposed three potential solutions. Paper highlighted cell image resolution and glial-glial cell transmission key limitations of these approaches.</p> <p>100-Node Discrete Hopfield Network (Neural Computation Project): Designed a 100-Node, Asynchronous Hopfield Network in PYTHON and examined the effects of differing pattern weights on the retrieval probability of the system. Also created synchronous version and examined effects on the speed of convergence.</p> <p>Action Potential Differentiation on Frog Sciatic Nerves (Neurophysiology Experiment): Designed an in vitro electrophysiology experiment that examined voltage-power curve signature on action potential generation in animal models. Redesigned MATLAB scripts to implement varying curve models for experiment instrumentation.</p> |
| AFFILIATIONS | Track and Field, Assistive Technology Team, NSBE, Bioelectronics Laboratory, Jasanoff Laboratory |
| SKILLS | <p>Programming: Python, MATLAB, Julia Programming, C, Verilog \LaTeX.</p> <p>Engineering: CAD, Soldering and Test Equipment, Circuit Design, FPGA Digital Design, Embedded Devices</p> <p>Neuroscience: Brain-slicing, Animal Handling, Animal Neurosurgery, Data Analysis</p> |