Cambridge, MA
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Timmy Bui

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EDUCATION

Massachusetts Institute of Technology (MIT) Cambridge, MA
Candidate for Bachelor of Science in Electrical Engineering and Physics May 2025
- Relevant Coursework: Power Electronics, Dynamics and Controls, Computation Structures GPA: 4.8/5.0

SKILLS

Technical: Python, C, Assembly, C++, MATLAB, Arduino, CAD, SolidWorks, Altium, PCB Design, PID, LTspice
Language: German, Korean, Spanish, Vietnamese

RESEARCH EXPERIENCE

Realta Fusion Madison, WI
Fusion Research Intern June 2024 – Present
- Utilize SolidWorks, machining tools, and solder to build projects supporting WHAM's first plasma milestone.
- Design an IGBT protection circuit in KiCad to shut down and manually reset 12 gate drivers in a fault condition.
- Optimize C++ IR camera script to increase framerate and interfaced RGA in Python to display pressure readings.
- Prepare ion gauges and MHD edge fluctuation probes to yield data on plasma stability and confinement.
- Implement a warning lights system to automatically indicate a high magnetic field presence on site.

Stuttgart University Program for Experiencing Research (SUPER) Stuttgart, Germany
Research Intern June 2023 – August 2023
- Modeled a PhD candidate supervisor's power cycling circuit in CAD to be used for device failure analysis.
- Designed and printed fully functional buck converter PCBs in Altium for power cycling tests.
- Operated power supplies & oscilloscopes in a high-voltage lab to perform semiconductor measurements.
- Worked in machining shop to manufacture circuit boards, IR camera mounts, and plexiglass layouts.

MIT Department of Architecture Cambridge, MA
Undergraduate Researcher February 2022 – May 2022
- Integrated electrification research into a PV power cost analysis of an off-grid educational site in Sierra Leone.
- Simulated climate patterns, illuminance, and thermal comfort variables over time with Grasshopper software.
- Modeled a strategic workflow to improve understanding of PV collection and DC inversion to AC.
- Acted as a branch between MIT Architecture students and the Sierra Leone contractor building the site.

LEADERSHIP

MIT Department of Physics Cambridge, MA
Undergraduate Teaching Assistant September 2022 – Present
- Mentor peers undergoing academic challenges in fundamental physics classes through pedagogical practices.
- Facilitate further small group discussions on overlooked class content to establish thorough comprehension.
- Foster collaborative environment in sections of 120 students by encouraging and answering questions.
- Administer lab & demo instructions to promote a hands-on exploration of mechanics and E&M.

MIT-Germany Global Teaching Labs Kaufbeuren, Germany
Guest Teacher January 2024
- Designed hour-long lesson plans for classes of 20-30 students from grades 7-12 at an all-girls school.
- Delivered STEM lessons in technical English to enrich the second language proficiency of German students.
- Incorporated relevant research topics and live demonstrations into lessons to spark the interest of girls in STEM.
- Adapted to the schedules of 8 high school teachers in physics, math, English, informatics, and robotics.

Camp Kesem at MIT Cambridge, MA
Volunteer Coordinator November 2021 – Present
- Organize 2 week-long summer camps for 200 campers aged 6-18 impacted by cancer as a unit leader of 12 kids.
- Write and present staff training modules to prepare 140 counselors in childcare, DEI, disability, and cancer.
- Recruited a class of 45 counselors and organized year-round bonding events to integrate them into the community.
- Generated $160,000 as 2023 FY Treasurer by networking with corporate sponsors to make camp free for families.