

CHRISTOPHER KYRIAKOS EVAGORA

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EDUCATION

Massachusetts Institute of Technology

Cambridge, MA

Candidate for MEng in Electrical Engineering and Computer Science

Expected: Feb 2024

B.S. in Electrical Engineering and Computer Science

GPA: 4.5 Graduated: Feb 2023

- Relevant Coursework: Robotic Manipulation, Underactuated Robotics, Digital Systems Lab, Electromagnetic Waves and Applications, Power Electronics Lab, Intro to Algorithms, Feedback System Design, Computation Structures, Machine Learning, Mechanics and Materials

WORK EXPERIENCE

MIT Biomimetic Robotics Lab Research

Humanoid Hardware Design and Optimization

September 2022 – Current

- Designing, assembling, and modeling the MIT humanoid battery pack from the ground up. Capable of at least 7.5kW peaks. Involves mechanical design, BMS circuit design, battery cell characterization, pack level transient modeling, and trajectory optimization subject to battery pack power constraints. Ongoing research for my thesis.
- Designed an embedded force sensor in the foot of the MIT humanoid to enable contact detection to inform the controller.

MIT Motorsports- Formula SAE Electric

Battery Team Lead

June 2020 – September 2022

- Lead designer and team organizer of the battery accumulator system for an electric racecar. Involves mechanical design and analysis of battery modules and boxes, thermo-fluid analysis and validation of water-cooling loop, and electrical design of bus-bars and fusing. Great emphasis on HV safety and maintainability.
- Designed a PCB to automatically charge and discharge cells to gather data on and build a model of different cells in house.

Boston Precision Motion Intern

EE and Firmware Engineer Intern

Jan 2023 – Feb 2023

- Designed hardware and developed firmware for a firm consulting a startup specializing in tele-operated humanoid robots.

TECHNICAL PROJECTS - DESCRIBED FURTHER AT [HTTPS://EVAGORAC.GITHUB.IO/](https://evagorac.github.io/)

High Power Electric Motorcycle

June 2022 - Present

- Designed and built an electric motorcycle. Involved designing and assembling a custom battery, custom precharge circuit, and heavy frame modifications starting from a mountain bike.

Six DOF robot arm

June 2020 - Present

- Designed, machined, and programmed a spherical robot arm from scratch. Standing over 50" tall, made from aluminum and 3d printed parts, and capable of receiving joint commands over a network, my robot arm named "Terry" aims to be a platform for future projects or ideas I might have that require a robotic platform. Ongoing efforts into writing an inverse kinematic solver from scratch.
- Winner of the design realization award from MIT's Project Tau design competition.

Digital Systems Lab Student Team Final Project

September 2021 - December 2021

- Implemented Field Oriented Control (FOC) using an FPGA and custom inverter.
- Individual work mostly focused on the schematic and implementation of the inverter power stage as well as a graphing tool capable of outputting relevant motor phase data to a VGA monitor.

CNC Wood and Aluminum Router

December 2018 - 2020

- Designed and assembled from scratch, my CNC router has been the backbone for many of my projects for years. It has allowed me to actually take my designs and make them feasible to obtain and manufacture.

SKILLS

- Altium Designer, Solidworks, LTspice, CNC, FPGAs, Microcontrollers, Verilog, Python, MATLAB, C, 3D-Printing, Arduino, Git