Moez Amini

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Education

Cornell University, College of Engineering, Ithaca, NY **08.2022 - 05.2026**

Bachelor of Science, Mechanical Engineering, Minor in Electrical and Computer Engineering

Relevant Coursework: Mechatronics, Heat Transfer, Fluid Mechanics, Mechanics of Materials, System Dynamics, Digital Logic and Computer Organization, Object-Oriented Programming and Data Structures.

Specialized Skills

Programming Languages: Java, Python, MATLAB, TwinCAT, LaTex

Technical Skills: SolidWorks, Fusion360, ANSYS Workbench & Maxwell, Auto-CAD, Micro-controllers, Cryogenic Temperatures, High Magnetic Fields, Pneumatic Systems, Machine Shop trained, Optics, Laser cutting, 3D printing

Languages: Proficient in English, and Persian, fluent in Pashto, and Turkish.

Relevant Engineering Experience

Braking Team Lead, Cornell Hyperloop Project Team, Ithaca, NY **09.2022 - 11.2024**

- Managed Braking team in optimizing magnetic and pneumatic braking systems to minimize costs and weight, while enhancing safety, manufacturability, and compliance with Hyperloop competition requirements.
- Designed, built, and tested the fluid system of the pneumatic brakes over the course of a semester.
- Developed CAD models for friction brakes, executed static simulations, and conducted in-depth research and testing plan for magnetic brakes and its eddy current effects.
- Automated the emergency braking system to activate during power loss or magnetic braking failure.
- Collaborated with a 50+ member team to built, integrate and test the Hyperloop maglev train.

Lab Assistant, Cornell Engineering Instructional Labs, Ithaca, NY **02.2024 - Present**

- Manage manufacturing parts for the MAE instructional labs, performing equipment maintenance, organizing and stocking supplies and tools, and assembling kits for laboratory activities.
- Provide technical support with lab equipments and kits to students in MAE lab sessions.

Intern, Canyon Magnet Energy, Stony Brook, NY **05.2024 - 08.2024**

- Researched, designed and built a Dynamo-type HTS Flux Pump from scratch within two months, achieving the capability to pump up to 700 Amps into HTS magnet coils under cryogenic conditions (77K).
- Designed a liquid nitrogen cryogenic box for testing HTS magnet coils under cryogenic temperatures.
- Developed a Transformer-Rectifier HTS Flux Pump to deliver up to 10k Amps into an HTS magnet coil.
- Contributed to the design and fabrication of a coil winding machine for 4mm to 15mm HTS coils, created CAD models, and assisted in TwinCAT motor programming.

Intern, Cornell Engineering Instructional Labs, Ithaca, NY **12.2023 - 01.2024**

- Tested and calibrated lab equipment for MAE classes to ensure accuracy and reliability for student use.
- Contributed to the preparation of materials and resources for upcoming courses and lab sessions; set up various experiments including rotor balancing and beam vibration.

Leadership & Community Involvement

Selection Committee Member, Cornell Professional Academic Advising Lead (PAAL) **2023-2024**
Member, Cornell Hydroponics club **08.2023 - Present**
Member, Cornell Amateur Radio Club **02.2023 - Present**