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, DFMEA, Electromagnetism, Digital Logic&Computer Org, Object-Oriented Programming and Data Structures.

Specialized Skills

Programming Languages: Python, Java, MATLAB, C++, TwinCAT, LaTex **Technical Skills:** NX, TC, Cleanroom, SolidWorks, Fusion360, ANSYS (Workbench, Maxwell, Fluent), AutoCAD, Pneumatics, Cryogenics, Microcontrollers, High Magnetic Fields, BERT, Servos, LIM motors, Machining, CNC, Transceivers, Optics, Laser cutting, 3D printing. **Languages:** Proficient in English, and Persian, fluent in Pashto, and Turkish.

Relevant Engineering Experience

Mechanical Design Engineer Intern, ASML, Wilton, CT **05.2025 - 08.2025**

- Led feasibility study on integrating optical transceivers to Reticle Stage of DUV & EUV lithography machines to improve reliability, reduce costs, optimize mass/volume, and support ASML's PFAS-free initiative.
- Designed, built, and tested a nanometer/milliradian-precision 4-DOF fixture to evaluate optical transceivers, performing signal strength, delay skew, and Bit Error Rate tests under varying misalignments and separations in collaboration with cross-functional teams.
- Designed and built a functional model for transceiver mounting on the Reticle Stage, performed robustness analysis under 43G accelerations while maintaining nanometer and milliradian tolerances.

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/weight, while enhancing safety, manufacturability, and compliance with Hyperloop competition requirements.
- Designed, built, and tested the pneumatic brake system from the ground up, performed static analysis for friction brakes, and researched and tested magnetic brakes.
- 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.

Cornell Engineering Instructional Labs, **Ithaca, NY**

Lab Assistant, **02.2024 - 05.2025**

- Managed manufacturing parts for the MAE instructional labs, performing equipment maintenance, organizing and stocking supplies and tools, and assembling kits for MAE laboratory activities.

Intern, **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 MAE courses and lab sessions; set up various experiments including rotor balancing and beam vibrations.

Electro-Mechanical Design Engineer 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.
- Contributed to the design and fabrication of a coil winding machine for 4-15mm HTS coils width.

Leadership & Community Involvement

Mechanical Representative Cornell Technology Commercialization Innovation Competition, **01.2025 - 05.2025**
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**