# 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, Lab View, 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 static 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.

**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.

**Lab Assistant,** Cornell Manufacturing Learning Studio, Ithaca, NY **08.2025 - Present**

- CAD development, Student Tutoring, General machinning and fabrication, CNC Machinning (green apron).

**Lab Assistant & Intern,** Cornell Engineering Instructional Labs, Ithaca, NY **12.2023 - 05.2025**

- Tested and calibrated lab equipment for MAE classes to ensure accuracy and reliability for student use.
- Managed manufacturing parts for MAE labs, and assembling kits for MAE mechatronics/dynamics labs.
- 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 for system dynamics class.

## 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**