

Adnan Slaibi

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EDUCATION

University of Massachusetts Lowell, Lowell, MA

Expected Graduation: May 2028

Bachelor of Science in Mechanical Engineering

CGPA: (3.7) Dean's List

Relevant Coursework: Computer Aided Design, Statics, Material Science, Physical Properties of Matter

RELEVANT EXPERIENCE

UMass Lowell – Rocketry Club (NASA USLI)

Lowell, MA

Simulations Engineer/Team member

Aug 2025 –Present

- Creating rocket and payload simulations in OpenRocket to analyze performance metrics.
- Developing a Monte-Carlo based flight program in Python to predict rocket behavior.
- Modeling in OpenFOAM CFD to evaluate aerodynamic forces, thermal loads, and reactive flows around liquid motors to inform engine development.

UMass Lowell - Multi-Phase & Reacting Flows Group

Lowell, MA

Honors Research Assistant – CFD Engineer (Volunteer)

Jan 2025 – May 2025

- Ran combustion simulations of an NH₃–H₂ hybrid ICE in CONVERGE CFD. Quantified buoyancy-driven flame curvature and instability behavior in ParaView for a U.S. Navy ONR funded research project.
- Developed Python and MATLAB tool for flame-front geometry and curvature analysis: Managed Linux HPC clusters' workloads using, Bash, Vim, and SLURM.
- Processed data into MATLAB and Excel spreadsheets, presented biweekly to faculty & researchers, collaborated with cross-institutional researchers, and self-taught advanced flame/fluid dynamics.

PROJECT EXPERIENCE

ClapTrap – Bright Manufacturing Competition Co-Lead/Mechanical Systems Jul 2025 – Aug 2025

- Designed and fabricated a custom autonomous line-following PCB in Altium with switching regulator, LDO, STM32 microcontroller, motor drivers, and 30+ passive components; validated thermal stability with ANSYS FEA.
- Integrated six IR sensors and an ultrasonic sensor for autonomous navigation; coded microcontroller logic in C/C++ (self-taught).
- Achieved 1 of only 8 teams to pass both the 1st & 2nd round, meeting full DFM compliance.

End Effector & CNC Axis - Team Lead/Design Lead

Sep 2024 - Dec 2024

- Led a 5-person team to design and fabricate a 3-axis CNC system with an end effector for autonomous cube manipulation and stacking.
- Designed precision parts in SolidWorks using GD&T, DFM, and Six Sigma; oversaw CO₂ laser fabrication of parts.
- Programmed MATLAB motion control algorithms, achieving 90% manipulation accuracy.

DIY Forge

Sep 2021 - Feb 2022

- Designed & built a propane forge with refractory firebrick insulation for sustained operation above 1000 °C.
- Applied combustion, heat transfer, and materials engineering principles to improve efficiency, safety, and durability under repeated thermal cycling.

SKILLS

Software - SolidWorks, ANSYS, OpenFOAM, CONVERGE CFD, MATLAB, Python, C++, Bash, OpenRocket, Altium, ParaView

Hardware & Mechanical - PCB Design, Embedded Systems, Prototyping, Laser Cutting, GD&T, DFM