Taher Mukadam

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Portfolio: https://lowinertia.com/portfolio/taher

Education

Purdue University GPA: 3.9 — West Lafayette, IN

Pursuing Bachelor of Science in Mechanical Engineering — *Aug. 2024 - Expected May 2027*

Relevant Coursework

Fluid Mechanics, Controls,Machine Design

Experience

Engineering Intern — July 2025 – Aug. 2025

TTE Engineering — *Dubai, UAE*

- Planned a pump selection optimization tool using Wilo software, defining algorithms, parameters, and workflows.
- Analyzed over 200 pump configurations for optimal head, flow, and efficiency.
- Improved selection speed by 25 percent and accuracy in case studies.

Project Machine Shop Student Employee — 8 Hrs/Wk – Jan 2025 – Present

Purdue University — *West Lafayette, IN*

- Taught 100+ students to use a machining mill and lathe.
- Kept the workspace safe while manufacturing personal projects such as chess pieces, nuts, and bolts.

Batch CFRO Undergraduate Research Student — Aug. 2025 – Present

Purdue University — *West Lafayette, IN*

- Designed and ran bench-scale batch CFRO experiments, controlling operating conditions (feed/draw concentration, circulation time, and pressure/flow settings) to quantify flux, water recovery, and solute rejection over time.
- Processed and interpreted experimental data using mass-balance calculations and performance plots to identify fouling trends, compare trial conditions, and recommend parameter changes to improve efficiency and stability.

Projects

Resistojet Propulsion System

Purdue Undergraduate Rocket Propulsion Lab — *West Lafayette, IN*

- Delivered 1 N nitrogen resistojet; improved efficiency to 1.5–1.6 mN/W (about 0.65–0.7 kW per N) by optimizing heater control, adding hot-zone insulation, and reducing parasitic heat loss.
- Streamlined test operations: conducted cold-flow, heat-soak, and stepped power tests; monitored V, I, T, P, mass flow, and thrust; iterated settings to lower steady-state power and improve repeatability.

Purdue SEARCH Club — Jan. 2025 – Present

Purdue University — *West Lafayette, IN*

- Optimized MiniHabitat design through 15+ iterations, improving space efficiency by 60 percent, enhancing system integration, and reducing costs by over 50,000 USD.
- Refined waste management, hydroponics, and power generation, ensuring 100 percent resource recycling and enhancing crew well-being in a biological closed-loop system.

NX 3D Assembly Design

Purdue University — *West Lafayette, IN*

- Utilized Siemens NX to design and assemble a Little Blazer Engine, as well as a Butterfly Valve Assembly
- Worked with a PDM system (Aras Innovator) to support design, re-use to simulate an industry PLM setting

MUN and TedX Organizer

Cambridge International School — *Dubai, UAE*

- Organized Cambridge International School Model United Nations for 520+ students and chaired at multiple Model United Nations conferences, organizing committees and running crises for a total of 250+ students with 18000 USD
- Organized Tedx@CISD, prepared 8 speakers and procured resources for the event for a 400+ person event

Skills

Softwares: NX, SolidWorks, Fusion, Java, Python, C/C++, Revit, JavaScript, HTML/CSS
Certifications: NX Design Associate, ASSET - C/C++, Google - Python, First-Aid Certified