Amena Aboulnaga

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EDUCATION

Bachelor of Science, Chemical Engineering   **Expected Graduation: May 2029**
University of Texas at Austin
Relevant Coursework: Organic Chemistry I, II, & Lab; Diff Eq w/ Linear Algebra; Intro to ChE Analysis
Cumulative GPA: 4.0

PROJECTS

Incoming R&D Engineer Intern, Fabric & Homecare, *Procter & Gamble*   **May 2026 – August 2026**

Quantum Computing Materials Research, *Wang Materials Group, UT-Austin*   **December 2025 – Present**
- Modeling transition-metal alloys to evaluate material properties for quantum transduction applications.
- Performed Density Functional Theory calculations using ABINIT in a Linux environment.

Composites Team Member, Formula SAE Design Team, *Longhorn Racing, UT-Austin* **August 2025 – Present**
- Selected from a pool of over 150 engineering student applicants for the composites team.
- Simulated aerodynamic loads on composite aerostructures using ANSYS finite element analysis to optimize stiffness-to-weight ratio.
- Modeled composite airfoils and structures in Solidworks with an emphasis on designing for manufacturing.
- Verified simulations with physical wind tunnel and materials testing.
- Created composite parts weight calculator in Excel for weight case studies, enabling easy design iteration.
- Optimized manufacturing processes, such as airfoil cutting, to improve part quality and repeatability.

Machine Learning-Controlled Automatic Door Prototype, *High School Project*   **December 2024**
- Designed an accessible door controlled by hand gestures to increase user autonomy.
- Trained a vision-based ML model integrated with VEX hardware to open/close the small, prototype door.

Self-Driving Car Prototype, *High School Project*   **November 2024**
- Built a car prototype of VEX parts, including motors, a controller, and a distance sensor.
- Programmed closed-loop feedback control so the car accelerates or stops based on object detection.

First Place Winner in the Paper Category at Texas History Day   **August 2024 – June 2025**
- Published a research paper on British policy in Mandatory Palestine during WWI in the UT-Austin digital history magazine *Not Even Past* and the Texas Historian.
- Won first place at regional and state History Days and also won the state-level Texas Jewish History Award.
- Represented Texas in the National History Day competition in Washington DC.

OTHER EXPERIENCES

Samsung Semiconductor Externship, *Austin, TX*   **January 2026**
- Toured showcase facilities and engaged with practicing engineers on semiconductor manufacturing.

ExxonMobil Refinery Externship, *Baytown, TX*   **January 2026**
- Participated in a site visit of a large-scale chemical facility and engaged with process engineers.

Tau Beta Pi   **January 2026 - Present**
- Selected for the engineering honor society for being in the top 1/8 of the junior class (by credit hours).
- Serviced the community through sorting donated clothes and river clean ups.

SKILLS

ANSYS (FEA), SolidWorks (CAD), ABINIT, Excel (Solver for materials balances), Linux, Fusion (CAM), Python, Fluent in Arabic and French (earned DELF B2)