

Abhishek Terala

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Summary

Mechanical engineering undergraduate focused on product design and design for manufacturability (DFM), with experience developing client-facing hardware systems from concept to functional prototype.

Education

Bachelors - Mechanical Engineering - 3.9 GPA, Duke University 08/2025 – 05/2029

- Honors: **Angier B. Duke Scholar** - Full Ride Merit Scholarship

- Coursework: EGR 101, 121, 201, 283 (Design, Innovation, Statics, Product Management), CS 201 (DSA), Math 218, 219, 353 (Linear Algebra, Multivariate Calculus, ODE & PDE), Econ 101, ARTHIST 303 (Hist. of Photography)

Visiting Student at Oxford University, New College, A.B. Duke Summer Study Experience 06/2026 – 08/2026

Experience

Teaching Assistant – EGR 101: Engineering Design, Duke University 08/2026 – 12/2026

- Mentor two first-year teams through a full client-based design cycle, from brainstorming to prototyping to testing.
- Facilitate engineering design processes, including the use of decision matrices and Trello for project management.
- Guide students through ToolBITS: introductory lessons to fundamental engineering tools such as CAD and 3D printing, casting and mold-making, and circuitry and microcontrollers.

Linq - Accessible Technology 09/2024 – 03/2026

- Engineered a low-cost Braille printer, designing the embossing and paper-feed mechanisms and integrating the mechanical and embedded control systems.
- Reduced manufacturing cost by 90% compared to market alternatives (\$2,000 → ~\$200) by redesigning the control architecture around a Raspberry Pi and off-the-shelf components.
- Collaborated with the New Jersey Center on Deaf-Blindness to validate requirements, deployed a functional prototype in Middlesex County, and open-sourced the CAD, firmware, BOM, and documentation.

Duke Motorsports Club (FSAE) 08/2025 – 03/2026

- Designed a tapered fuel tank and an external fuel pump mounting system in SolidWorks; the tank redesign lowered the vertical centroid by ~43% within a fixed 4.5L volume constraint to optimize chassis CG within packaging limits.

Handsfree Wheelchair Distance Measurer 08/2025 – 01/2026

- Designed and built a wheelchair-mounted measurement device for Duke University's Director of Physical Accessibility, integrating custom mechatronic systems for accessibility surveying and field measurements.
- Implemented an ESP32-hosted web server that streamed real-time distance measurements to a mobile interface, supporting accessibility planning for Duke University's \$10M+ Main Quad renovation.
- Validated the system to 0.8 in of error and <0.5% repeatability over 300 ft, then packaged and delivered the completed device to the client for deployment.

Observing Phase Changes in n-hexane from 0 to 12 GPa, University of Rochester 06/2024 – 11/2024

- Researcher at the Center for Matter at Atomic Pressures, an NSF Physics Frontier Center
- High-pressure phase-transition experiments on n-hexane (0–12 GPa) via diamond anvil cell; micro-scale sample fabrication via EDM.

Skills

- **Computer-Aided Design (CAD)**: SolidWorks, 3DEXPERIENCE, CAD-to-manufacturing workflows (STL/STP)
- **Manufacturing & Prototyping**: 3D printing, rapid prototyping, mechanical/electronic assembly, design for manufacturability (DFM), Six Sigma Tolerancing
- **Technical Documentation**: LaTeX (Overleaf), technical memos, formal engineering reports (APA formatting)

Community Service/Hobbies

The Ahmad Butler Foundation, Treasurer 11/2023 – Present

- Manage \$125,000+ in organizational assets, led a tri-state youth outreach campaign (NJ, NY, PA) that secured 2,800 signatures to lobby for increased federal pediatric cancer research funding.

Rhydhun, Social Chair of Duke Bollywood Dance Team | **Tennis, Ex-Varsity + State Champ** | **Pickleball** | **Photography**