# Anoushka Bhardwaj

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## Summary

Mechanical engineering student with hands-on experience in CAD, FEA, and prototyping through team-based design projects and internships, applying analysis and manufacturing practices to develop innovative, lightweight, and quality-driven solutions.

## Education

**University of Massachusetts Amherst** Anticipated May 2026

*Bachelor of Science in Mechanical Engineering*

**Relevant Courses:** Heat Transfer, Fluid Mechanics, Design of Mechanical Components, Dynamics, Thermodynamics, Strength of Materials, Probability/Statistics, Statics, Fundamentals of Transportation, Human Factors Engineering, Statistical Quality Control

## Work Experience

**Indorama Ventures — Engineering Intern** Ho Chi Minh City Dec 2024 – Feb 2025

- Interned at Indorama Ventures Vietnam under the Production Manager, gaining hands-on exposure to large-scale PET preform and bottle manufacturing processes.
- Gained hands-on knowledge of two-stage and one-stage PET molding technologies, including resin drying, injection molding, stretch blow molding, and key process parameters affecting quality.
- Collaborated with shop-floor engineers to observe and understand defect troubleshooting (e.g., haze, wall thickness issues) and how they related to process settings.
- Produced a final report summarizing insights into process optimization, energy efficiency, and sustainable polymer manufacturing practices.

**General Mills — Project Intern** New Delhi Jun 2022 – Sep 2022

- Served as a Project Intern in the Foodservice and Bakeries Division, focusing on expanding B2B engagement for products such as Betty Crocker baking mixes.
- Conducted primary research with bakery owners in Delhi, India and secondary benchmarking of loyalty programs across FMCG and other industries.
- Designed and delivered a comprehensive loyalty program strategy and deployment toolkit, recommending three program models with projected growth impacts to strengthen customer retention and sales across 10,000+ bakery clients.

## Academic Projects

**Lightweight Modular Wrench — Group Design Project** Spring 2025

- Collaborated in a 3-member team to design and prototype a two-part wrench (ABS jaw, aluminum handle) under 70g.
- Contributed to CAD modeling, FEA simulation, and by-hand stress analysis; oversaw machining, thermal press-fit assembly, and testing to 18 lb-ft torque.
- Co-authored the final technical report detailing design rationale, testing results, and future improvements.

**High-rPET Content in PET Bottle Manufacturing — Research Paper** Summer 2025

- Researched engineering challenges of integrating high-rPET content in PET bottle manufacturing, focusing on mechanical, optical, and safety limitations.
- Applied analytical evaluation of reinforcement, chemical recycling, and process optimization strategies to assess feasibility, scalability, and cost trade-offs.
- Proposed a hybrid solution combining short-term processing improvements with long-term chemical recycling investments to advance circular PET sustainability.

## Technical Skills

MATLAB, LaTeX, Blender, Variable Speed Vertical Band Saw Machine, Track Milling Machine, Coordinate-measuring machine, SolidWorks, ANSYS Workbench, Java, SQL, NWA Quality Analyst, HTML5, CSS, Python, MS Word, MS Excel, MS PowerPoint

## Interests

UMass Intercollegiate Badminton Team, Intramural Soccer and Basketball, Golf, 20th Century Japanese Literature