

Abigail Nicholas

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Self-motivated Mechanical Engineering and Design student aiming to expand experience in product design and development, utilizing technical skills in CAD and Adobe software while applying value sensitive design strategies.

Education

Northeastern University, College of Engineering, Boston, MA

May 2026

Candidate for Bachelor of Science in Mechanical Engineering and Design | **GPA: 3.74/4.00**

- Honors: Dean's List (2022, 2023, 2024), Connections Scholarship Recipient
- Engineering Courses: Dynamics, Thermal Systems Analysis and Design, Mechanics of Materials, Thermodynamics, Statics, Material Science, Differential Equations and Linear Algebra, Calculus II-III, Physics I-II, Cornerstone of Engineering I-II
- Design Courses: Experience Design Principles, Design: Processes & Practices, Experience and Interaction, Color and Composition
- Activities: Society of Women Engineers, EVkids, Alliance of Civically Engaged Students

Newton High School, Newton, NJ

June 2022

Work Experience

R&D Mechanical Engineering Co-op, IDEXX, Westbrook, ME

July 2024 - Dec 2024

- Operated within a cross-functional team environment, delivering regular project updates and a design review presentation
- Fabricated device components in SolidWorks, developing prototype parts and drawings and applying the iterative process
- Executed compression testing on Ametek LS1 Mechanical Tester, generating concise and consistent data

Sound Technician, *Self-Employed*, Newton, NJ

Dec 2021 - Present

- Customize sound arrangement, patching venue equipment to facilitate a successful performance
- Operate Soundcraft Si Impact 40-channel Digital Mixer for 3+ annual events held at Newton High School

Math Tutor, *Self-Employed*, Newton, NJ & Boston, MA

Dec 2019 - Present

- Conduct weekly in-person and virtual tutoring sessions, designing lessons to reinforce math concepts with students K-12

Lake Mohawk Country Club, *Pool Crew Member, Interim Asst. Manager*, Sparta, NJ

May - Aug 2023

- Processed concession stand transactions using Jonas Club Software, aiding an efficient kitchen atmosphere
- Promoted a safe and respectful environment for members and coworkers

Skills

- Applications: SolidWorks (CSWA), AutoCAD, Arduino, Adobe Photoshop, MATLAB, Microsoft Office, Google Suite
- Programming: C++, HTML, Python

Academic Projects

Dream Capture, Design: Processes & Practices

Fall 2023

- Designed an experiential intervention in collaboration with a team of three to improve the morning routine
- Developed an app prototype in Figma, navigating a dream commission service to connect users with artists
- Presented a slide deck and produced a shipping container mockup in Adobe Illustrator to execute systems theory

Vermicomposting Museum Exhibit, Cornerstone of Engineering I-II

Fall 2022

- Collaborated in a team of three to develop an educational museum exhibit, spotlighting the vermicomposting process
- Fabricated device components in SolidWorks and AutoCAD, printing accurate parts in a 3D printer and laser cutter
- Integrated 360 servo motor, arcade buttons, open circuits, LED strip, and laser cut rack and pinion using Arduino
- Applied value sensitive design by adding graphic, auditory, and tangible elements, establishing a sensory-appealing experience

Community Service

EVkids, *Tutor Coordinator, Tutor/Mentor*, Boston, MA

Sep 2022 - Present

- Organize tutor recruitment and community events, fostering community within the organization
 - 2023 Expanding Horizons Gala - facilitated guest check-in and monitored auction, promoting a positive guest experience
- Meet weekly with a student to review academic progress and to develop an interpersonal relationship

Project Self-Sufficiency, *Menstrual Hygiene Supply Drive*, Newton, NJ

May 2021

- Coordinated a fundraising drive, resulting in the collection of over 6000 menstrual hygiene products