Hovan Ngo

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Education

Northeastern University, Boston, MA

Bachelor of Science in Mechanical Engineering | Fall 2027

- GPA: 3.75 ~ Machine-Shop Certified | 5x Dean's List | Best Healthcare Hack | Wolfram Award
- **Relevant Courses:** Robot Controls, Dynamics, ECE Python I, Material Science, Mechanics of Materials, Statics, Diff EQ

Experience

Mechanical and Software Member | NU Rover **Sep. 2024 – Present**

- Developing a simulation environment for Northeastern University's Rover team using Gazebo in ROS 2, streamlining code testing and deployment.
- Design and manufacture various parts of the Rover including the model arm and claw using SolidWorks.
- Utilize agile management methodologies such as SolidWorks PDM and Notion to enhance productivity.

Robot Operations Assistant | Boston Dynamics **Jun. 2024 – Aug. 2024**

- Supported the Stretch Warehouse Robotics project, ensuring efficient daily testing operations and contributing to system functionality for research and development.
- Organized operation tickets in Jira, tracking tasks, identifying priorities, and resolving issues to maintain project timelines.
- Collaborated with cross-functional teams to troubleshoot and optimize robot performance, providing real-time feedback for system enhancements.

NASA Lunabotics Team | University of Massachusetts, Amherst **Feb. 2023 – Jun. 2024**

- Led as Secretary on the E-Board and mechanical team member, drawing from 3 years of First Robotics Experience.
- Co-led the chassis design process utilizing SolidWorks and Fusion 360, ensuring durability and performance under the simulated conditions of the lunar surface.
- Coordinated general meetings, planned key milestones to meet project deadlines, and developed the bill of materials and Project Management Plan to reduce and organize project costs.
- Assisted team members with a diverse range of technical tasks including hands-on activities such as operating power tools and CAD software.

Engineering Intern | Arc Industries **Jan. 2024 – Mar. 2024**

- Performed research and design tasks for a renewable energy start-up specializing in vertical-axis wind turbines.
- Addressed engineering challenges and assisted in the implementation of new renewable energy technologies.
- Collaborated closely with the CEO to research and identify opportunities for the company's expansion into emerging energy sectors, providing valuable insights and recommendations.
- Completely revamped the company website using Squarespace, improving user experience and functionality.

Projects

Kelp Farming Exhibit **Dec. 2024**

- Developed a museum exhibit for elementary students about the benefits of kelp farming for sustainability.
- Programmed a dynamic GUI using Python to enhance user interaction and guide the exhibit experience.
- Modelled the physical components of the exhibit (fishing rod, main exhibit body) using SolidWorks and Fusion 360.
- Integrated Arduino-based hardware, incorporating servo motors, RFID modules, NeoPixels, and interactive push buttons.
- Authored a 150-page technical report detailing the complete engineering design cycle including the ideation, development, and implementation processes.

LidaCane | Best Healthcare Hack | Wolfram Award **Nov. 2023**

- Spearheaded the development of a Smart Blind Cane aimed at assisting the visually impaired, integrating ToF LiDAR technology to enhance navigation and safety.
- Utilized Fusion 360 to design sensor and controller mounts. Incorporated haptic feedback mechanisms to alert users about obstacles or changes in terrain, enhancing the user experience through touch-based cues.
- Enabled seamless communication with smartphones via Bluetooth, allowing users to receive real-time data, configure settings, and enhance the functionality of the Smart Cane.
- Awarded Best Healthcare Hack and the Wolfram Award at HackUMass XI for being a finalist.

Skills

- **Design:** Fusion 360, SolidWorks, AutoCAD, Cura (Prusa, Ender Pro, MakerBot)
- **Programming:** Python, MATLAB, C++, Arduino, Rust, ROS 2
- **Manufacturing:** Bridgeport mill, band saw, lathe, miter saw, drill press, laser cutter, and various hand tools.