

# Alexander Vandenberg

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## Education

**Northeastern University**, Boston, MA

*Dec. 2023*

Candidate for Bachelor of Science in Mechanical Engineering, Minor in Mathematics

**GPA:** 3.87

**Courses:** Measurement and Analysis, Electrical Engineering, Mechanics of Materials, Dynamics, Thermodynamics, Statics, Programming with Data, Probability and Statistics, Differential Equations and Linear Algebra, Calculus 1-3

**Activities:** AerospaceNU, American Society of Mechanical Engineers, Club Spike Ball, Intramural Softball

**Certified Data Analytics Professional**, Google and Coursera

*Aug. 2022*

## Skills

**Applications:** SOLIDWORKS (CFD and FEA), Ansys Fluent, AutoCAD, Arduino, Fusion3 Reactor, PDM Vault, Tableau, Microsoft Office 365

**Programming Languages:** Python, MATLAB, VBA, C++, R, SQL, HTML

## Work Experience

**Northeastern University**, Boston MA

*Sep. 2022 - Present*

Mechanical Engineering Tutor

- Guided students through practice problems, provided supplementary notes, and explained key class concepts
- Offered tutoring for Statics, Thermodynamics, and Dynamics

**Eemax/Rheem**, Waterbury CT

*Jan. 2022 - Jul. 2022*

Mechanical Engineering Co-op (Innovation, R&D, NPI, QA)

- Performed IP research and contributed to multiple potential patents, including “Insulated Tank with Diaphragm”, “Water Heater Inductive Charging”, “Cotton Tablet Leak Stop”, and “Hydrogen Powered Water Heater”
- Created numerous flow simulations to validate and improve new concepts for tankless electric water heaters
- Overhauled the company’s red tag data entry system using Excel and VBA
- Redesigned the flagship heater core to improve quality and saved up to \$35,000 by means of material reduction
- Prototyped several different designs for heating element removal wrenches; ensured prototypes would not fail under significant loads using FEA and physical testing
- Responsible for creating engineering change requests in PDM Vault. Implemented approved engineering changes and identified critical dimensions using SOLIDWORKS Inspection

**Lamothermic Precision Investment Casting Corp**, Brewster NY

*Jun. 2019 - Jul. 2019*

Metal Parts Inspector

- Ground out defects in thousands of metal parts and made sure parts passed a quality assurance test
- Designated parts as “finished”, “needs to be sand blasted”, “needs to be welded”, or “scrap”
- Cleaned and maintained pneumatic tools

**Carmel Central School District**, Carmel, NY

*Jul. 2017 - Sep. 2017*

IT Worker

- Set up and wired computers for a high school, middle school, and two elementary schools
- Maintained computer internals and upgraded hard drives to solid state drives
- Assisted teachers with computer, printer, and projector issues

## Interests

- Learning more about data analytics, data science, structural simulation, and fluid simulation
- Lumberjacking, selling firewood, cycling, taking apart old machines, and watching movies with friends