

# 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:** 3.90

**Courses:** System Analysis and Control, Measurement and Analysis, Introduction to Flight, Fluid Mechanics, Electrical Engineering, Dynamics, Mechanics of Materials, Thermodynamics, Statics, Material Science, Programming with Data

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

**Google**, Coursera

*Aug. 2022*

Data Analytics Professional Certificate

**Carmel High School**, Carmel, NY

*Jun. 2020*

**Activities:** National Honor Society Vice President, Mentoring, Music Honor Society, Jazz Band, Area All State

## Work Experience

**Northeastern University**, Boston, MA

*Sep. 2022 - Present*

Mechanical Engineering Tutor

- Tutored mechanical engineering students in Measurement and Analysis, Dynamics, Thermodynamics, Mechanics of Materials, and Statics
- Offered students assistance with homework problems, supplemental notes, and resources for class projects

**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 SOLIDWORKS 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
- Developed 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

- Ensured parts passed a quality assurance test by grinding out defects
- 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
- Solved computer, printer, and projector problems for teachers and school staff

## 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