

# Alexander Vandenberg

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Portfolio: alexandervandenberg.github.io/portfolio  
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## Education

**Northeastern University**, Boston, MA

*Dec. 2023*

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

**GPA:** 3.92

**Courses:** System Analysis and Control, Measurement and Analysis, Introduction to Flight, Fluid Mechanics, Dynamics, Electrical Engineering, 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 students in Measurement and Analysis, Dynamics, Thermodynamics, Mechanics of Materials, and Statics
- Supported students with homework problems, class projects, and studying for exams
- Offered advice related to finding co-ops, on campus employment, and class registration

**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

**House Construction**, Galway, NY

*May 2021 - Sep. 2021*

- Labored over the summer to convert a two-car garage into a house
- Ran dozens of electrical lines through walls, installed insulation in walls and ceiling, and attached sheetrock to walls
- Operated a jackhammer to chisel out stones in the bottom of a five-foot trench to install a septic tank
- Laid down hundreds of feet of pipes to connect the house plumbing to a well and the septic tank

**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

## 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