

Tristan Gilbert

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EDUCATION

- Vanderbilt University** Nashville, TN
MS, Mechanical Engineering; focus in energy and materials, minor in controls Expected May 2020
– 4.00/4.00 GPA. Thesis topic: stack pressure control for solid-state lithium batteries
- BEng, Mechanical Engineering; minor in Materials Science and Engineering* Expected May 2020
– 3.95/4.00 engineering GPA, 3.85/4.00 cumulative. Four-year dual BEng/MS (with thesis)
- University of Glasgow and Glasgow School of Art** Glasgow, Scotland
Study abroad student; Mechanical/Aerospace Engineering and Studio Art January 2019 – May 2019

EXPERIENCE

- Form Energy** Somerville, MA
Reactor Development Intern May 2019 – August 2019
– Architected cell and test platforms for electrochemical energy storage systems – 5 inventions disclosed
– Developed and performed electrochemical and materials testing with EIS, chronopotentiometry, etc.
– Standardized design language for chemical compatibility, ease of assembly, and manufacturability
- Sila Nanotechnologies** Alameda, CA
Process Development Intern May 2018 – August 2018
– Modified deposition system to provide bed agitation – resulted in new capability for Sila Nano
– Developed deposition recipes, loading/unloading processes, and analytical methods for above system
– Demonstrated improved throughput and uniformity by above system through SEM, BET and particle sizing
– Developed framework for and began implementation of nanoparticle mixing process on production line
– Conducted in-situ characterization of chemical vapor deposition-like processes with gas cell FT-IR
- Vanderbilt University, Materials Science** Nashville, TN
Research Assistant – Hatzell Lab (from August 2019), Kidambi & Caldwell Labs (prior) October 2017 – Present
– Developing instrumentation and analysis methods for stack pressure control of solid-state lithium batteries
– Probed reaction mechanisms of atmospheric pressure hBN deposition onto nickel foam substrates
– Characterized plasmonic/photonic nanostructures with SEM, FT-IR, Raman – *in review at Phys Rev B*
- Vanderbilt University, Mechanical Engineering** Nashville, TN
Research Assistant – Zelik Lab for Biomechanics and Assistive Technology August 2016 – May 2018
– Designed, built, and tested prosthetic ankle-feet with passive toe joints through to studies with amputees

LEADERSHIP

- Vanderbilt Aerospace Design Laboratory (Rocket Team)** Nashville, TN
Vice President and Payload Lead (from May 2019), Field Engineer (prior) August 2017 – Present
– Leading payload design, organizational structuring, engineering tool selection, and strategy for 2020 team
– Won NASA Student Launch Initiative competition in 2018 and 2019 as field and subscale rocket engineer
- Makerspace and Innovation Center – Vanderbilt University** Nashville, TN
Makerspace Mentor January 2017 – Present
– Taught rapid prototyping and fabrication skills to university students and Nashville community members
- Experience Vanderbilt** Nashville, TN
Operations and Logistics Chair August 2017 – Present
– Led design and implementation of program that awards \$360,000 of financial aid to students each year

SKILLS

- Programming/Data analysis:** MATLAB, Python, Excel, Origin, JMP, imageJ, LabVIEW
Mechanical design/technical drawing: Creo/Pro-E, SolidWorks, Onshape, Fusion 360
Fabrication and prototyping: Machining, laser/waterjet cutting, 3D printing, Arduino, DAQ, basic mechatronics
Material characterization: SEM, EDS, Raman, FT-IR, TGA, optical microscopy, BET, and pycnometry