Matthew Q. Gothard

East Canton, OH| (330)-491-7184 | matthew.q.gothard@vanderbilt.edu | sites.google.com/vanderbilt.edu/mqg

EDUCATION

Vanderbilt University, Nashville, TN **May 2021**
Bachelor of Engineering, Mechanical Engineering
Cumulative GPA: 3.62

PROFESSIONAL EXPERIENCE

Mechanical Engineering Intern **June 2019 -July 2019**
Formlabs, Durham, NC

- Assembled and scripted a jig which automated the collection and compilation of data from hundreds of experimental trials
- Designed, build, and coded an improved jig for the factory calibration of thousands of Form 3 SLA 3D printers
- Designed and assembled the z-axis for the plywood 3d printer created for the 2019 Formlabs hackathon

Senior Design Mentor **September 2018 - Present**
Lipscomb University, Nashville, TN

- Coach a senior electrical engineer through incorporating microcontrollers into a physiological sensing system.
- Generate reasonable and timely goals for the prototyping of the senior design project.

SyBBURE Searle Undergraduate Research Program Student Fellow **December 2017 - Present**
Vanderbilt University, Nashville, TN

- Brainstorm and prototype solutions to pertinent multi-disciplinary problems in small teams.
- Generate biweekly research update presentations and provide feedback on peers' research projects.

RESEARCH AND DESIGN PROJECTS

Long Exposure LED X-Y Plotter **September 2018 - Present**

- Assemble an X-Y plotter with an auxiliary LED and use Python-based G-code to program the LED to change position and color according to a digital image.
- Generate long-exposure images of the moving LED to be displayed at a Vanderbilt art exhibit for selected ArtLab fellows.

Pressure Sensing Insole **August 2017 – December 2018**

- Designed custom circuit boards in Autodesk Eagle and etched onto flexible material to create pressure sensitive array.
- Programmed a custom graphical user interface of the insole array with a real-time, interpolated heatmap in MATLAB.

Airplane Landing Gear **August 2018 - December 2018**

- Analyzed patents of airplane landing gear and developed a design and design requirements for the airplane landing gear.
- Designed individual parts in PTC Creo and generated a constrained assembly to simulate retraction and extension.
- Created technical drawings of the parts and calculated necessary motor specifications to meet the design requirements.

Theme Park Design **August 2018 - Present**

- Design themed entertainment ride concepts for future design competitions in the Themed Entertainment Association club.

HONORS AND AWARDS

Bruce and Bridgett Evans Scholarship **August 2018**

- Received the award due to interest and aptitude in entrepreneurship and recommendation by Vanderbilt School of Engineering faculty.

Research Progress Award **August 2018**

- Achieved the most research progress over the summer period out of a group of 40 undergraduate students in the Vanderbilt University SyBBURE Searle Undergraduate Research Program.

TECHNICAL SKILLS

Programming: Python, JavaScript, MATLAB, LabVIEW

Product Design: Solidworks, PTC Creo, AutoCAD, Fusion 360, Autodesk Eagle, Adobe Illustrator