

Portfolio:  
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# Zachary Davenport

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## Education

**Olin College of Engineering** Needham, MA GPA: 4.0/4.0 Class of 2020

*Major: Mechanical Engineering, concentration in Anthropology*

Recipient of 4-year merit scholarship & NAE Grand Challenges Scholar

Courses: Quantitative Engineering Analysis, Engineering for Humanity, Principles of Engineering, Affordable Design+Entrep.

**Riverfield Country Day School** Tulsa, OK GPA: 4.0/4.0 May 2016

- Recipient of Exemplary Student Award, Head of School Award, Lifetime Student Award, National Merit Honor

## Experience

**Lobaki Virtual Reality** Jackson, MS + Clarksdale, MS Summer 2018-19

*Intern specializing in architectural visualization, CAD asset creation, VR curation, digital fabrication, & music composition*

- Developed custom 3D assets for concussion therapy and rehab application
- Designed a virtual meeting space for educators around the globe to meet and network with one another
- Created pathway for sculpting assets in virtual reality and then 3D-printing creations
- Learned various photogrammetry softwares and created demos for the company

**Olin College of Engineering** Needham, MA Sept. 2016 - May 2020

*Project Team Manager and Mechanical Consultant for Olin Aquatic Robotic Systems (OARS)*

- Co-led a team of 25 people working on a long-term project to conduct research with autonomous sailboats

*Personal Investigation into 3D-Printed Rockets* Jan. 2017 - May 2017

- Investigated the design, aerodynamics, rapid prototyping, and launch-testing of 3D-printed model rockets

*Candidates' Weekend Design Challenge Lead* Mar. 2017 - Mar. 2020

- Led a team of 30 students in creating team design challenges as a part of Olin's yearly admissions process
- Involved in the Design Challenge creation since freshman year, then took on a leadership role every year thereafter

**Weissman Foundry Scout Manager** Needham, MA Sept. 2018 - May 2020

*Inaugural student employee and project manager of a tri-college collaborative makerspace*

- Planned machine shop setup, trained students on electric woodworking tools, CAD and 3D printing, and laser cutters
- Advised students from Babson, Olin, and Wellesley colleges on their projects and managed other Scout employees

**Shifting Rhythms Technical Aid** Clarksdale, MS Summer 2018

*Worked with the Shifting Rhythms program to deploy a mobile STEM makerspace and curriculum in the Mississippi Delta*

- Troubleshoot and repaired 3D printers, developed new CAD and virtual reality curriculum, reworked existing curriculum
- Engaged local children to help them bring their designs to life and familiarize them with STEM opportunities

**Summer Research and Engineering** Needham, MA Summer 2017

*Worked on a team of four at an old textile mill studying deindustrialization, anthropology, and industrial engineering*

- Conducted field work to engineer a better textile chute aimed at improving workflow, communication, and worker health

**SmartStep Shoes** Needham, MA + New Orleans, LA Summer 2017- Present

*Served as the lead designer/engineer on an intergenerational team designing shoes to improve mobility in older adults*

- Worked with potential users to determine important features and understand usability concerns
- Received top prize at the LeadingAge HackFest
- Presented designs and products at the LeadingAge Annual Meeting in New Orleans to over 7000 people, plus investors

**Custom Design and Fabrication** Tulsa, OK + Clarksdale, MS Spring 2016 - January 2020

*Contracted by various clients for design and fabrication projects*

- Worked with a client to create custom home designs and renderings for a future property to be constructed in Tulsa
- Designed and constructed an interactive physics exploration installation, a mini-makerspace, a mirrored virtual reality chamber, and an air-powered ball mover for Riverfield Country Day School's preschool
- Designed a virtual reality school for Lobaki, Inc. that earned the company a \$10M contract

## Skills

**General:** Mechanical design, FEA, modeling & simulation, 3D sketching, sketch modeling, prototyping, human-centered design, user testing & research, technical writing, visual communication, project management, scrum, Asana

**Computer:** Proficient in SolidWorks, SketchUp, Arduino, MATLAB, Mathematica, ReCap, Adobe Photoshop and Illustrator

**Tools Training:** ShopBot, drill press, belt sander, band saw, scroll saw, chop saw, hand tools, 3D printer, laser cutter, vinyl cutter

**Interests:** Human-centered design, anthropology, piano, music composition, architecture, woodworking, photography, travel