

CHRISTINA SEGAR

Project Portfolio: <http://www.christinasegar.com/>

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EDUCATION

FRANKLIN W. OLIN COLLEGE OF ENGINEERING (MAY 2020)

Needham, MA

Mechanical Engineering, GPA 3.76

Relevant Courses: Mechanical Prototyping, Fundamentals of Robotics, User-Oriented Collaborative Design, Mechanical Design, Affordable Design and Entrepreneurship, Powered Mobility Assistive Technology (Fall 2018 research)

EXPERIENCE

Carnegie Robotics, LLC

Pittsburgh, PA

Mechanical Design Intern, Autonomous Mine Detection System (five-axis, mobile robot)

June 2018 – August 2018

- Modified part designs to fix mechanical issues, reduce manufacturing cost, and improve system performance
- Designed complex CAD parts in use on current model including a cable-routing bracket to prevent motion failure
- Performed environmental testing and analysis on electromechanical brake system

Olin Robotics Lab Research

Needham, MA

Co-coordinator, Mechanical Lead

August 2016 – June 2018

- Helped organize project thrusts, familiarize newcomers with lab, and bridge student-professor communications
- Designed and prototyped endcaps and motor mounts for air-tight, remote-controlled submarine systems
- Created intricate CAD model of sub with accurate material properties for buoyancy analysis
- Fabricated pneumatic-powered flexible articulators, testing effectiveness of various fabrication methods

Olin Course Assistant Positions

Needham, MA

Design Nature (Fall) and Introduction to Mechanical Prototyping (Spring)

August 2017 – December 2018

- Worked as TA for first-year class on bio-inspired design, focused on SolidWorks support and design theory
- Provided constructive feedback to help students improve design of bio-inspired Play Project for 4th graders
- Supported students in learning SolidWorks tools and translating conceptual design into kinetic mechanical sculpture

Rapid Prototyping

August 2017 – December 2018

- Assisted SCOPE (Senior Capstone Project in Engineering) teams with 3D printer fabrication and post-print processes
- Performed necessary maintenance and troubleshooting on 3D printers and lye bath

Olin Robotics Lab Intelligent Vehicles Summer Research

Needham, MA

Underwater Vehicles

June 2017 – August 2017

- Created detailed CAD for standardized sub system including ballast system, electronics layout, and actuation
- Designed and tested modular 3D printed mounting systems and 3D printed component sealing techniques
- Documented submarine build processes: <https://tinyurl.com/NeptuneSub> and <https://tinyurl.com/PlutoSub>

FIRST Robotics Team 971 Spartan Robotics

Mountain View, CA

Design Captain, Project Manager, Technical Presenter

September 2012 – May 2016

- Led CAD design, created subsystem CAD specializing in gearboxes, intake mechanisms, and manipulators
- Worked with carbon fiber to create custom parts, mold fabrication, layups, and post-cured modifications
- Designed prototypes, ran experiments, and analyzed data to answer design system questions
- Fabricated sheet metal parts, assembled subsystems, repaired broken or worn components

SKILLS

- Mechanical Design – 6+ years working with SolidWorks in modeling, assembling, drawing, and version control
- Machining and Prototyping – 3D printer, laser cutter, sheet metal tools, mill, woodworking, carbon fiber composites
- Graphics and Communications – Adobe Illustrator, Adobe Photoshop, MS Word/Excel
- Languages – Conversant in Spanish
- Programming – Arduino, Java, and MATLAB