

Christina Segar

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EDUCATION

FRANKLIN W. OLIN COLLEGE OF ENGINEERING (MAY 2020)

Needham, MA

Mechanical Engineering

EXPERIENCE

Olin Electric Motorsports – Formula SAE

Needham, MA

Composites sub-team

August 2016 – present

- Modeled and fabricated carbon fiber body panels for aerodynamics and aesthetic exterior design
- 3D-printed rigid mounting brackets for body panels

Olin Robotics Lab Research

Needham, MA

Co-coordinator, Mechanical Lead

August 2016 – present

- Designed and prototyped endcaps and motor mounts for air-tight, remote-controlled submarine systems
- Helped start new research group focused on furry robots with mechatronic skeletons and human-centric interactions

Soft Robotics

Needham, MA

Mechanical sub-team, mold design and fabrication

August 2016 – present

- Created pneumatic-powered flexible articulators, testing effectiveness of various fabrication methods
- Applied design findings to pneumatic-powered fishtail, universal gripper, and claw articulator

Olin Course Assistant Positions

Needham, MA

Design Nature

August 2017 – present

- TA for first-year class on bio-inspired design, focus on Solidworks support and design theory

Rapid Prototyping

August 2017 – present

- Assist senior capstone teams with 3D-printer fabrication and post-print processes

Olin Robotics Lab Intelligent Vehicles Summer Research

Needham, MA

Underwater Vehicles

June 2017 – August 2017

- Created heat propulsion setup to support whale detection research under contract for Scientific Systems
- Studied bio-inspired propulsion, Lorenz force actuators, and standardized ballast systems
- Designed and tested submarine platforms with modular 3D-printed mounting systems
- Documented submarine build process: <https://tinyurl.com/NeptuneSub> and <https://tinyurl.com/PlutoSub>

FIRST Robotics Team 971

Mountain View, CA

Design Captain, Project Manager, Technical Presenter

September 2012 – May 2016

- Created subsystem CAD, specialized 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
- Led brainstorming and CAD teams
- Fabricated sheet metal parts, assembled subsystems, repaired broken or worn components
- Explained design process to judges, manufacturing sponsors, and general public

SKILLS

- Mechanical Design – 5+ years using Solidworks, Onshape, Fusion 360
- Machining and Prototyping – sheet metal, mill, composites, 3D printer, laser cutter, vinyl cutter
- Graphics and Communications – Adobe Illustrator, Adobe Photoshop, Inkscape, InDesign, MS Excel
- Vehicles – tractor, ATV, quadcopter
- Languages – Conversant in Spanish
- Software – Arduino, Java, and MATLAB