# ONUR TALU

## MECHANICAL ENGINEER

✉ onur.talu@students.olin.edu
🌐 otalu.github.io/Portfolio
📞 (781)530-8647
📍 1000 Olin Way, MB 601.
   Needham, MA 02492

## Skills

**SOFTWARE**
SolidWorks
Adams Car
AutoCAD
Finite Element Analysis
Ubuntu
Python
MATLAB
Mathematica
LaTeX
Arduino C
HTML/CSS

**FABRICATION**
Rapid Prototyping
CNC Router
Lathe
Mill
MIG Welding
TIG Welding
Sheet Metal
Laser Cutter
3D Printing
Green Machines
Woodworking

**LANGUAGES**
Turkish
German

## Education

Olin College of Engineering
Mechanical Engineering Bachelor of Science 2020
GPA 3.97
50% Olin Tuition Merit Scholarship

American Collegiate Institute
International Baccalaureate DP 2016

## Experience

### Suspension Geometry/Chassis Designer
FSAE Olin Electric Motorsports

Needham, MA
June 2017 to Current

- Working on suspension geometry and chassis design of Olin Electric Motorsports' fourth generation FSAE (Mk.IV) car.
- Designing jig to weld outboard system and do precision adjustments to suspension geometry.
- Utilized MF-Tyre and MATLAB for cornering stiffness and tractive force analysis to choose new tires and wheels.
- Wrote MATLAB scripts for 2D kinematics to determine roll and pitch characteristics.
- Used Solidworks to design chassis that was driven by rules constraints, suspension geometry and packaging.
- Used Adams Car and Optimum K to validate MATLAB models and do 3D dynamic analysis.
- Performed Finite Element Analysis (FEA) on tabs and fasteners.
- Manufactured tabs, control arms, suspension jigs, using 3D printers, lathe and mill, and oversaw the TIG welding of rear suspension.

### Mechanical Engineering Intern
Shell TechWorks

Cambridge, MA
May 2018 to Aug. 2018

- Used Solidworks to design pressure gauge enclosure that would be would be used in hydrostatic testing.
- Performed iterative design process to make enclosure more aesthetic, compact and robust, and be able to be mass produced by injection molding.
- Utilized 3D printers and laser cutter to build prototypes of the enclosure, last of which was selected as version to be used in next iteration.
- Developed a cost analysis model that simulated how Shell's decisions on changing fuel types on marine fuels would impact payback time.
- Cost analysis model is used by stakeholders as calculator for payback time under different price levels, regulation standards and start years.

### Research Assistant
Olin College Blind Sailing Lab

Needham, MA
June 2017 to July 2018

- Working on introducing and distributing first prototype of system to sailing centers and teaching instructors on using system
- Designed first prototype of an assistive system for blind sailors that compete in match racing
- Improved previous Homerus Blind Match Racing technology to be more useful, more robust, cheaper and easily adaptable for different uses
- Programmed RaspberryPi with Python, equipped system with GPS units, optimized communication between components
- Conducted user oriented design to improve mechanical and software components of system

## Projects

### Portfolio
otalu.github.io/Portfolio

### Bounce
Oct. 2017 to Dec. 2017

- Built a stewart platform that bounces a ping pong ball, in a team of five.
- Did mechanical design for the top and bottom plates of platform, sensor and laser mounts, alternative hitting mechanism with solenoids.
- Manufactured parts using 3D printer and laser cutter, and assembled system.

### Steady State Flight
Nov. 2017 to Dec. 2017

- Modelling and simulating the steady state flight of a DeHavilland Beaver in 2D.
- Used Mathematica and XFoil to model longitudinal stability of the aircraft, keeping it at a specific altitude for a desired velocity, and controlling the elevator angle.
- Simulate the flight using Simulink, interfaced with FlightGear.