Trent Dye

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EDUCATION

Olin College of Engineering
Needham, MA
B.S. Mechanical Engineering, 2018
GPA 3.85

Coursework in Mechanical Design, Statics, Solid/Fluid Dynamics, FEA, Robotics, Materials Science, Thermodynamics, Linear/Nonlinear Systems

SKILLS

CAD & Simulation
Solidworks, ANSYS, COMSOL, Fusion 360, KiCad

Fabrication & Prototyping
Manual/CNC Mill, Lathe, Laser Cutting, 3D Printing, MIG Welding, Sheet Metal, SMD Soldering

Software & Programming
MATLAB, Arduino/C++, ROS/C, Python, Java

EXPERIENCE

Boeing   *Student Engineer, Senior Capstone Project | 2017-2018*
- Working with 5 other students to automate a chain of processes in the creation of airplane wire bundles.
- Using 3D printing, metal machining and laser cutting to produce and test iterative, integrated prototypes.
- Performed project management duties for entire team by setting and enforcing prototyping deadlines.
- DoD TRL-6 tested prototype will be delivered at end of year, for intended factory deployment in 2019.

Barrett Technology, LLC   *Mechanical Engineering Intern | Watertown, MA | 2017*
- Prototyped two robotic arm attachments for use in upper extremity rehabilitation of stroke patients.
- Designed attachments to satisfy specific weight, kinematic, electronic, and comfort requirements.
- Used 3D printing and silicone molding to generate prototypes and sent out drawings to machine custom parts.

Amber Kinetics, Inc.   *Mechanical Engineering Intern | Union City, CA | 2015 & 2016*
- Devised systems for automating bearing and vacuum pump testing for flywheel energy storage units.
- Used FEA to design a custom MIG-welded steel forklift boom attachment to lift 5,000 lb. steel flywheels.
- Created models of CNC machine bed and fixturing components for use in CAM toolpath generation.

SELECTED PROJECTS   *see pictures and video using the shortlinks below.*

Autonomous Ground Vehicle   *trent.ws/robo | Fall 2016*
- Designed a vehicle to navigate Olin's courtyard using a sensor array including LIDAR, GPS and IR.
- Built and fabricated modular robot hull to protect and give access to batteries, motors and sensors.
- On a team of 6, designed the hull and contributed code to publish sensor data to ROS topics.

Manual and CNC Machining of a Tesla Turbine   *trent.ws/tesla | Spring 2017*
- Fabricated an air-powered Tesla turbine from aluminum and stainless steel that spun at over 23,000 RPM.
- Applied metrology principles using micrometers, bore gages, etc. to achieve <0.0005" tolerances.
- As the final project, spent over 60 hours of machining time on the CNC and manual mill and lathe.

Physical Therapy Wearable Device   *trent.ws/wear | Fall 2016*
- Prototyped a wearable device using electromyography (EMG) to help patients do their exercises properly.
- Worked with physical therapists and co-designed with patients to iterate on the product design and direction.
- Developed electronics on a team of 2 engineers and designed visual prototype alongside 2 industrial designers.

CNC Pancake Printer   *trent.ws/cake | Fall 2015*
- In eight weeks, designed and fabricated machine that prints pancakes onto a griddle using a 2-axis gantry.
- On a team of 4, designed the gantry, choosing to commit fully to laser cutting to prototype the machine.
- A video of the project that I filmed and edited appeared in The Boston Globe, Business Insider and Hackaday.