# Christopher Goul

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**EDUCATION**

**Massachusetts Institute of Technology**
Bachelor of Science in Mechanical Engineering, June 2019

**EXPERIENCE**

**Contour Crafting Corporation**
*Robotics Engineer*- June 2019- Present

- Lead engineer developing a concrete delivery system for construction 3D printing
- Integration of mechanical design with electrical systems, controls, and data management
- Extensive ideation, risk analysis, design, fabrication, and iteration of critical modules to develop a novel system within a unique set of constraints
- Mechanical design of core mechanisms, electronics and sensor integration with ROS, motor controls and motion profile development, selection and machining of components

**Conservation International with MIT Photovoltaics Lab**
*Researcher* June 2018-June 2019

- Designed and built autonomous solar quadcopters for conservation work in the Andes
- In charge of drone design and integration with sensors, charging, and GPS modules
- Optimizing a system with conflicting constraints to maximize flight time and payload while minimizing charging time

**Meggitt Defense Systems**
*Engineering Intern, Aeromechanical Systems* June – Aug. 2017

- Designed electromechanical devices, such as a compact lifter for an airplane flap and an actuator for pin release, starting from concept and ending with sending drawings to fabrication
- Each mechanism had to meet specific system requirements and constraints
- Ran FEA, CFD, and worked in SolidWorks

**Institute for Soldier Nanotechnologies** *Researcher*, Sept. – Nov. 2016

- Performed Taylor impact testing on polycarbonate projectiles with a gas gun
- Analyzed high-speed camera footage to determine material yield stress at high strain rates

**National Fuel Cell Research Center**
*Research Intern,* June-Aug. 2016

- Created programs for data analysis of the High Temperature Fuel cell at UCI Medical Center
- Used Python to develop a fast, clear interface to display and store running data from the cell

**MIT Space Propulsion Lab**
*Researcher,* March-May 2016

- Built a high-voltage power supply for the testing of miniature ion thrusters
- Selected and fabricated modules to convert mains AC to the high voltage required for testing

**SKILLS**

**Mechanical:** Rapid Prototyping, Mill, Lathe, 3D Printing, Laser Cutting
**Computer:** C**,** Python, Matlab, HTML, ROS, Arduino, Raspberry Pi
**CAD:** AutoDesk Inventor, Fusion 360, SolidWorks, Mastercam

**ACTIVITIES**

**Blacksmithing**: Forging pattern-welded blades and tools at the MIT blacksmithing lab, designed and built a propane forge with PID temperature control
**Engineering Projects:** Designed and fabricated an electric motorcycle
**Seaweed Farming:** Developed a semi-autonomous boat system for automated seaweed farming
**Homebrewing**: Various styles of beer, cider, and mead