# Lucas Orion **Calvert**

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**Honors Aerospace Engineering student interested in fluids, data analysis, modeling, and manufacturing - looking for work as an engineering intern in the summer of 2019**

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## Education

**M.S. in Aerospace Engineering Sciences [Expected Completion 2020]** *Boulder, Colorado*

University of Colorado - Boulder *2018 - PRESENT*

- Focus Area: Fluids and Propulsion

**B.S. in Aerospace Engineering Sciences** *Boulder, Colorado*

University of Colorado - Boulder *2015 - 2019*

- Engineering Honors Program
- GPA: 3.69 — Deans List 5 Semesters

## Skills

### Design

- 2D & 3D CAD (AutoCAD, Fusion 360, Solidworks), 2D Hand Drafting, Printed Circuit Board Design & Layout (Eagle)

### Programming

- MATLAB, Python - Modeling and Data Analysis
- Swift, C++ - Application and User Interface Development
- Arduino - Embedded systems design
- LaTeX - Documentation

### Manufacturing

- Rapid Prototyping - 3D printer design, construction and operation (FDM & SLA), laser cutter operation and maintenance
- Machining - Computer Numerical Control and manual machining with mills and lathes
- Woodworking - Basic and Advanced woodworking operations - speaker cabinets to wall paneling to tables and desks

### Relevant Coursework

- Fluid Mechanics, Aerodynamics, Computational Analysis, Electronics, Structures, Design Projects

## Work Experience

**Undergraduate Researcher** *Boulder, Colorado*

Computational Mechanics and Geometry Lab at the University of Colorado *2018-PRESENT*

- Created an application to aid in early-stage design exploration
- Completed an Isogeometric Analysis introduction course to become familiar with the unique mathematical tools used in the lab
- Implemented an Isogeometric Finite Element Heat Transfer solver in MATLAB from scratch

**Electronics and Fabrication Technician** *Boulder, Colorado*

University of Colorado Idea Forge *2015-PRESENT*

- Lead workshops teaching students the fundamental electronics and fabrication techniques needed to be successful
- Helped students troubleshoot hands-on projects - from simple embedded system design to prototyping CNC machines
- Designed and built tools to improve functionality and work flow of the lab

## Recent Projects

**Optical Space Tracking System Design** *CU Boulder Senior Project*

*2018-2019*

- Designed, modeled and built a levelable frame to hold a star-tracking mount and camera to allow accurate pointing at objects of interest
- Designed, laser cut and assebled acrylic boxes to enclose electronic components and protect them from damage
- Performed a motion study to ensure full range of motion without mechanical interference between components
- Created a cable-wrap prevention method that keeps the system from being damaged if the cables become tanlged

**Design-Space Exploration Application Development**

*2018*

- Developed the framework for an application that to aid in early-phase design by allowing users to parametrically deform a mesh
- Implemented an interface between a MacOS application in Swift and the C++ 3D Geometry platform OpenCascade
- Designed and Implemented customizable UI Elements to provide a consistent theme for user interactions

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**Other Activities:**

**Sigma Gamma Tau National Aerospace Engineering Honors Society [Officer]** - Organize club events, participate in outreach events

**CU Hiking Club [Officer and Trip Leader]** - Organize trips, teach members outdoor skills and manage club gear

**Student Pilot** - Certified for solo flight of a Piper PA-38