# Michael Levy

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## EDUCATION

**M.S. Aerospace Engineering- Emphasis in Flight Dynamics and Controls** December 2020
**University of Michigan, Ann Arbor** **GPA *3.62/4.00***

**B.S. Mechanical Engineering, Minor Aerospace Engineering- Magna Cum Laude** June 2019
**Oregon State University** **GPA *3.80/4.00***

## WORK EXPERIENCE

SpaceX — Hawthorne, California
**Associate Engineer - Starlink User Terminal** *May – September 2020*

Designed and implemented automation software for use in defect area on production floor. Managed and gathered data on containments throughout the factory using SQL. Wrote containment tool in python which aided triage, quarantine, and resolution phases of a containment. Developed and implemented defect escalation strategies.

Zepher, Inc. — Bingen, Washington
**Manufacturing Engineering Intern** *June – September 2019*

Designed, executed high rate manufacturing of CICADA Micro UAVs in an electromechanical environment. In a 10 week time span took manufacturing from conception to full rate. Authored technical production documentation.

Insitu, Inc. *A Boeing Company* — Hood River, Oregon
**Mechanical Engineering Intern** *June – September 2018*

Designed and built Production Line Replaceable Unit (LRU). LRU allowed Air Vehicle to fly in an electronic warfare environment. Developed a fixture using SolidWorks that reduced production time from 5 hours to 30 minutes.

NASA Ames Research Center — Mountain View, California
**Intern, Experimental Aero-Physics Division** *June – September 2017*

Research focused on increasing feasibility of acoustic tests in the US Army 7x10 wind tunnel. Collaborated with mentors on full-scale aeroacoustic testing and analysis of prototype hardware.

**Intern, Experimental Aero-Physics Division** *June – September 2016*

Research focused on verifying the aerodynamic and acoustic performance of a small in-flow microphone array. Studied the acoustic affects of changing pitch, yaw, and fairing shaped for future testing capability.

**Intern, Applied Manufacturing and Aeromechanics Divisions** *June – September 2014*

Research focused on prototype development for mouse transport device on the International Space Station.

**Intern, Aeromechanics Division** *June – September 2013*

Designed and built a 1/50th scale model of the 80x120 wind tunnel for an environmental impact study.

## LEADERSHIP & PROJECT EXPERIENCE

OSU AIAA, ESRA 30K Rocket Team — Corvallis, Oregon
**Senior Design Project** *June 2018– June 2019*

Designed, built, and tested a high-powered rocket for the Space Port America Cup 30,000 ft solid fuel category. Responsible for fin, parachute, and ejection system. Ran all simulations to ensure favorable flight characteristics.

**Aero & Recovery, Weight & Status Lead**

Ensured launch vehicle design tracked towards meeting the target altitude and project met key deadlines. Launch day coordinator and integrator of all recovery systems. Defined and executed process of recovering rocket safely.

Halo Holds, Inc. — Corvallis, Oregon
**Founding Member** *February 2018 – June 2019*

From ideation to MVP, led development of a smart rock climbing wall that was built in my garage. Pitched the initial concept at a student competition and subsequently raised 26K in innovation awards during 2018-19.

## SKILLS

**Engineering:** C++, C, Python, MATLAB, SQL, GIT, Arduino, Tableau, LaTeX, Open Rocket

**Computer-Aided Design Software:** SolidWorks, AutoCAD, Rhino, Google Sketchup

## LEADERSHIP & PROJECT EXPERIENCE (CONT.)

Sports Engineering and Product Development Club — Corvallis, Oregon

**Founder, Vice President** — *August 2017 – June 2019*

Pioneered club for students with an interest in the engineering of sport. In first year grew club to 50+ members, brought in $15k in funding. Accomplished mission with product development, guest speakers, and industry tours.

OSU College of Engineering — Corvallis, Oregon

**Engineering Student Council VP Finance & Administration** — *April 2018 – June 2019*

Oversaw 50+ College of Engineering Sponsored Student Organizations (SSOs) funding requests. Reviewed and evaluated requests equitably and provide advocacy for all SSOs. Assisted COE in distributing $100k+ of support.

**Computer Aided-Design Teaching Assistant** — *March 2016 – June 2017*

In a lab environment, gave weekly hour-long lectures to 60+ students on SolidWorks. Provided assistance on assignments, coordinated with professor, communicated with students, and graded assignments.

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## RELEVANT COURSEWORK

University of Michigan

**Graduate Robotics Systems Laboratory** — *ROB 550*

- Exposure to sensing, reasoning, and acting for physical-embodied systems
- Mobile robot Simultaneous Localization and Mapping (SLAM) as well as an arm manipulator
- Development on Linux command line, C, C++, and Python. Work documented at robotics.mplevy.com

**Robot Operating Systems** — *ROB 511*

- Path planning, control, and robot operating system fundamentals
- Extensive programming in JavaScript work documented at pathplanning.mplevy.com

**Guidance, Navigation, and Control of Aerospace Vehicles** — *AEROSP 584*

- Implemented navigation algorithms and guidance controller for UAV to land on aircraft (simulator)
- Deterministic and Stochastic Theory

**Flight and Trajectory Optimization** — *AEROSP 575*

- Numerical algorithms and software for finite dimensional optimization
- Discrete and continuous time optimal control (extensive MATLAB programming)

**Aerospace Information Systems** — *AEROSP 552*

- Timed automata and hybrid systems
- Search algorithms, data structures, data filtering (extensive C++/C programming)

**Linear Systems Theory** — *AEROSP 550*

- State equations, transfer functions
- Causality, controllability, observability, realizations, stability
- Linear time varying systems, minimal realizations, subspaces (extensive fundamental mathematics)

**Intermediate Dynamics** — *AEROSP 540*

- Newton-Euler Dynamics, Lagrangian dynamics
- Vector transforms and frame realizations (extensive fundamental mathematics)

Oregon State University

**Introduction to Instrumentation and Measurement Systems** — *ME 451*

- Self driving robot solved maze fastest out of 30 teams in course
- Understood function, operation, and application of common embedded systems (extensive arduino programming)

**Space Systems Engineering** — *AAE 412*

- Formulate the equations for orbital trajectories, orbital transfer, and rendezvous for mission-specific requirements
- Rigid body kinematics for spacecraft (extensive MATLAB programming)

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## HONORS & AWARDS

**Oregon State University:** Tau Beta Pi, Leadership Academy, Honor Roll all terms, Nominated: Most Outstanding Senior

**Northwest Intercollegiate Sailing Association:** All-Northwest Leader 2017-18, All-Northwest Skipper 2016-17

**Boy Scouts of America:** Eagle Scout rank awarded August, 2015

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## References

**Roy Cureghian**- Manager- Starlink Build Reliability, SpaceX — roy.cureghian@spacex.com

**Jaime Mack**- CEO, Zepher, Inc. — jaime.mack@zepher.com

**Dr. Scott Paja**- Assistant Dean, Oregon State University — scott.n.paja@oregonstate.edu

**Dr. Clifton Horne**- Aerospace Engineer, NASA Ames — clifton.horne@nasa.gov