

# Malachi Williams

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## EDUCATION

**University of Washington**, Seattle, WA

Anticipated Graduation 06/2017

**Degree:** Civil (Structural) Engineering | **Minor:** Aeronautical & Astronautical Engineering

**Relevant Coursework:** Heat Transfer, Steel Design, Structural Analysis, Rocket Propulsion, Fluid Mechanics, Flight Mechanics, Orbital Mechanics, Structural Design, Mechanics of Materials, Timber Design, Data Management, Hydro Design, Construction Engineering, Construction Materials, Geotechnical Surveying/Engineering, Transportation Engineering

## SKILLS

**Mastery** (daily use): Solidworks, CATIA V5, ENOVIA, PDM, GD&T, MATLAB, Lean engineering/5S, LaTeX, 3Dprinting, Sketch (UI/UX), Spanish

**Proficient** (6+ months): ANSYS (structural, fluent), Manufacturing/machine shop fabrication, Fusion 360, HTML5/CSS Web Design, MS Project, AutoCAD (Civil 3D)

**Learning:** Excel (Data Analysis), SQL, R, Python, Javascript, ReactJS

## PROFESSIONAL EXPERIENCE

**UWashington Hyperloop, Director // Manufacturing/Composites Team Lead // Mechanical Engineer** 06/2015 – Present

- Led team to 6th in the world and 4th in the US out of 1,200 teams at first SpaceX Hyperloop competition
- Won Subsystem Safety Technical Excellence Award for pod design detail, strength of supporting analysis/tests, and quality presentation to board of engineers
- Current focal for: Aerostructures and Composite Design/Manufacturing
- Performed kinematic design of assemblies within the chassis, propulsion, and braking
- Performed Structural FEA on main chassis, pusher interface and initial prototypes
- Performed carbon composite fairing wet layup and process planning
- Took part in manufacturing and assembly of passive electrodynamic suspension system, propulsion system, magnetic braking population and pusher interface

**Tesla Motors, Design Engineering Intern**, Palo Alto, CA

06/2016 – 09/2016

- Designed and developed front trunk seal and test equipment to validate performance
- Designed and developed high frequency NVH foam absorber for next gen products
- Optimized electro-mechanical wiper systems to eliminate rework on assembly line
- Participated in production line compressor manufacturing and sensor calibration/alignment

**Boeing, Fuel Systems Design Engineering Intern**, Renton, WA

06/2015 – 09/2015

- Traveled to permanent mold casting foundry to create visual inspection criteria and guidelines for suppliers to mitigate surface discontinuities found on aluminum cast parts
- Designed support brackets and developed detailed installation drawings for the fuel quantity indication system wash line tubing
- Investigated and resolved pre-flight volumetric tap off issues and completed drawing change release process in a timely manner to not impact production

**Boeing, Materials Review Board Liaison Engineering Intern**, Renton, WA

06/2014 – 09/2014

- Developed instructions to resolve deviations to CFM56-7B turbofan engine structure and components
- Utilized knowledge of material specifications and manufacturing processes to ensure that specifications, design, criteria and performance schedules were maintained
- First intern to be sole engineer on site to facilitate engine build up line at 42 airplanes per month rate

**Boeing, Engine Build Up Design Engineering Intern**, Renton, WA

06/2013 – 09/2013

- First intern to lead a product revision improvement project, directed Anti-Ice valve through design process and coordinated with vendor to ensure design changes did not affect part quality or lead time
- Developed, maintained and modified structural engine component designs using CATIA V5 to provide product definition to other engineering groups, production operations and customers

**Scholarship Junkies, Engagement Manager Dev Ops // Workshop Facilitator**, Seattle, WA

06/2016 - Present

- Won 1st place in Seattle Venture Partners Pitch Competition, University Non-Profit division
- Accepted into Jones + Foster Accelerator, with \$25,000 investment
- Conducted presentations nationwide teaching essay improvement and scholarship winning tactics to high school students

## PROJECTS

**L-2 High Powered Rocket**, Mansfield, WA

09/2016 - 10/2016

- Designed, manufactured and launched a fiberglass single stage, K695R-L single motor rocket
- Optimized to reach apogee at 890 meters with a speed of Mach 0.91
- Utilized main and drogue dual parachute system for redundancy