Erik Olaf Gustafson

4021 Kinney Gulf Rd
Cortland, NY, 13045
eog5@cornell.edu
(607)-749-0508

Spacecraft Dynamics | Guidance Navigation and Control | Aircraft Dynamics and Control | Entry Descent and Landing

Education

M.Eng. Aerospace Engineering, *Cornell University*, Ithaca, NY **Expected May 2019**

B.S. Mechanical Engineering, *Cornell University*, Ithaca, NY **Expected May 2018**

- Minor: Aerospace Engineering
- GPA: 4.0/4.3 (Cumulative)
- Relevant Coursework:
  - Spaceflight Mechanics, Dynamics of Flight Vehicles, Aerospace Propulsion, Aeronautics
  - Feedback Control Systems, System Dynamics, Dynamics
  - Analysis of Mechanical and Aerospace Structures, Mechanical Properties and Selection of Engineering Materials, Statics
  - Mechatronics, Mechanical Property and Performance Laboratory, Mechanical Synthesis
  - Fluids/Heat Transfer Lab, Heat Transfer, Fluid Dynamics, Thermodynamics
- Supplementary Coursework:
  - Planetary Formation and Evolution, Exoplanets and Planetary Systems
  - Object Oriented Programming and Data Structures
- Upcoming Coursework: Celestial Mechanics, Spacecraft Technology and Systems, Multivariable Control Theory
- Dean's List: Fall 2014-Spring 2017

Diploma Awarded *Homer High School*, Homer, NY **June 2014**

- Advanced Regents Diploma with Honors in Science and Mathematics
- GPA: 3.9/4.0

Experience

NASA Armstrong, Controls and Dynamics, *Seung Yoo,* Lancaster, CA **Summer 2017**

- Automated Aircraft Panel Model Generation for Vortex Lattice Analysis and Aeroelastic Simulation
- Reduced Time to Perform Aeroelastic Simulation by 50% with a Graphical User Interface
- Experimented with Control of High Order Unstable Systems in an Inverted Pendulum Lab
- Researched Flight Applications and Implementation of Model Predictive Control

Design Build Fly, Team Lead, *Cornell University,* Ithaca, NY **Fall 2014-Present**

- Team Lead for the Fall 2017-Spring 2018 Academic Year
- Created Genetic Algorithms for Lateral Stability Optimization using MATLAB and AVL
- Implemented Requirements Based Design Approach for Remote Control Aircraft
- Designed Airframe Elements, Analyzed Dynamic and Static Stability, and Designed Control Elements

CisLunar Explorers, Mechanical Team *Dr. Mason Peck,* Ithaca, NY **Fall 2016-Fall 2017**

- Designed and Analyzed Two 3U Satellites to Orbit the Moon after Launch on SLS-EM1
- Designed Satellite Bus, Electronics Stack EMI Shielding
- Performed Modal Analysis and Design Modification to Comply with Dispenser Requirements
- Performed Mission Sequence Design to Achieve Lunar Capture

Moog Inc, Systems Engineering, Aircraft Group, *Jason Ward,* East Aurora, NY **Summer 2016**

- Developed Failure Modes and Effects Testing and Safety of Flight Procedures for Tiltrotor Control Actuators
- Automated FMET and SOF with dSpace AutomationDesk
- Modified Testing Procedures to Mitigate Wear

Moog Inc, Systems Engineering, Aircraft Group, *Johannes Aubrecht,* East Aurora, NY **Summer 2015**

- Modified and Analyzed Dynamic Math Models of Flight Controls in Simulink
- Assembled and Tested Electro-Hydraulic Actuators
- Developed Benchmark Tests for the SCALEXIO Real-Time Computation Unit

Cornell University, Lab Assistant, *Dr. David Schneider, Malika Grayson,* Ithaca, NY **Summer 2013**

- Performed Wind Tunnel Flow Visualization Tests with Smoke Wire
- Compared Turbulent Boundary Layer in Wind Tunnel Tests to Computer Simulations
- Designed Programming Challenges for Cornell University's Systems Engineering 5100 course
- Designed and Constructed Obstacles for Autonomous Robots

Additional Proficiencies

Programming Languages: Matlab, Python, Java, C
Mathworks Software: Simulink, Stateflow, Guide
Modeling Software: Solidworks, ANSYS
Aerodynamic Analysis: AVL, XFOIL, XFLR5, ZAERO
Orbital Mechanics: Systems Took Kit (STK)
dSpace Software: AutomationDesk, ControlDesk

Extra-Curricular Activities and Interests

Men's Glee Club | The Hangovers All Male a Cappella | Coffee Brewing Methods | Cross Country Road Trips | Board Games