Stephen S. Gutierrez

Active Secret Security Clearance

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Education

UNIVERSITY OF CALIFORNIA, SAN DIEGO *June 2020*

Bachelor of Science in Aerospace Engineering

Professional Experience

SYSTEMS ENGINEER – NORTHROP GRUMMAN, SAN DIEGO, CA

September 2020 – January 2021

- Assisted in completion of FMECA (Failure Mode, Effects, and Criticality Analysis) deliverable with customer approval
- Identified Severity I Failure Modes using (FMECA) in collaboration with the Reliability and Maintainability Team and recommended preventative maintenance saving $34,748 per year (*approximating more than $1 million in savings over the 30-year aircraft program life span*)
- Led meetings presenting FMECA findings to Senior Engineers and examined errors for necessary modifications
- Performed fault and maintenance analysis with the Prognostics and Health Management team for Aerospace Systems to ensure aircraft operation
- Analyzed fault logs for several aircrafts to identify anomalies and verify functionality of components
- Investigated customers concerns and issues and led a team to compile recommendations

STUDENT SATELLITE PILOT – VIASAT, CARLSBAD, CA

January 2019 – December 2019

- Created data analysis tools to organize and tabulate spacecraft telemetry for spacecraft operation records using Python
- Created data parsing and reformatting tool for spacecraft that let user choose files from directory to be sent to USAF using Python
- Collaborated with engineers to run simulations for EPOCH display pages when a satellite is in anomalous conditions
- Created and validated ARES programming scripts for automation of satellite operations
- Performed daily monitoring and execution of spacecraft commands in coordination with engineers abroad
- Achieved certification to operate communication satellites

Extracurricular Experience

AIRCRAFT FLIGHT SIMULATION

March 2020 – June 2020

- Simulated the flight of an aircraft producing a 3-D graph of the plane's position and orientation from recorded data
- Programmed a Monte Carlo simulation predicting touch down locations of aircrafts on a histogram plot using Euler integration
- Simulated yaw rate and side acceleration for rudder doublets using Runge-Kutta 4^{th} order integration on equations of motion
- Created a 3-D plot of a suborbital flight trajectory simulated using 3 DoF equations of motion through 4^{th} order Runge-Kutta

LUNAR HABITAT DESIGN AND DEPLOYMENT CONOPS – SENIOR DESIGN PROJECT

March 2020 – June 2020

- Simulated the trajectory of a rocket on a specified date to lunar orbit with two impulsive burns using GMAT
- Wrote white paper detailing the trajectory of a rocket carrying deployable habitat to lunar surface
- Wrote CONOPS of a sustainable and expandable lunar habitat detailing mass, power and volume estimates for operation
- Developed a 3-D model of the lunar habitat to scale using Blender illustrating deployment and expandability

HYBRID AIRCRAFT TO BRING INTERNET TO RURAL AREAS – SENIOR DESIGN PROJECT

March 2020 – June 2020

- Created a MATLAB program to find lift, velocity and thrust over the operating time for a hybrid aircraft
- Iterated through different designs with considerations for reusability, efficiency and economic factors
- Addressed problems in each aircraft design and developed solutions for future iterations of the aircraft

Additional Skills

- **Technical Skills**: Fault Analysis, GD&T, MS Excel, Word, Power Point, Visio, Project Management, Python, Simulation Techniques, Swift, MATLAB, Solidworks, Blender, Lasercutting, 3-D printing
- **Soft Skills:** Problem Solving, Teamwork, Leadership, Adaptability, Proactivity, Communication, Public Speaking