John A. Doe

phone: (123) 456-7891 | email: john.a.doe@gmail.com | portfolio: horizonone.net

Experience & Research

NASA Jet Propulsion Laboratory (2017 – Present)

Lunar Flashlight Requirement Management and Tracking (May 2019 - Present)

- Requirement management and tracking for the flight project's systems and subsystems
- Managed and updated requirements as changes and validations occurred
- Provided requirement analytics to better visualize project status and projections

Space Mission Formulation Toolkit Development (May 2018 – Present)

- Led the creation of model-based systems engineering (MBSE) tools for CubeSats and SmallSats
- Developed and validated physics-based python models for spacecraft evaluation
- Conceptualized and implemented new formulation tools for assessment of mission feasibility
- Assembled a network of connected models that accurately assess complex interactions between spacecraft subsystems
- Worked with a diverse range of subsystem experts to ensure model accuracy and usability

REMORA Spacecraft Design and Development – *Internship* (May 2017 – Aug. 2017)

- Participated in the development of a spacecraft capable of rendezvousing with debris objects
- Designed spacecraft structure, hardware selection, and configuration (6U and 12U CubeSats)
- Performed power analysis and created a master mass and equipment and power list (MEL and PEL)
- Performed structural optimizations in CAD to reduce structure mass and evaluate rendezvous forces
- Selected optimal hardware components that met mission and design requirements
- Conducted various Systems Toolkit (STK) simulation and analysis and compiled debris data

MyState Space Grant Program (2014 – 2017)

MyState Research CubeSat 2 (MRC2) – *Fellowship* (2017)

- Oversaw and managed mechanical manufacturing of the spacecraft
- Created CAM Toolpath for CNC machining of the spacecraft
- Participated in developing and preparing processes for a flight-qualified spacecraft
- Prepared internal documents on the manufacturing and assembly of the spacecraft

Deployable MyState Research Sail (DAAS) – Project Lead – *Fellowship* (2015 – 2017)

- Lead engineer on the development of the largest deployable solar sail from a 3U CubeSat
- Designed the entire satellite structure from a concept to a finished working prototype
- Performed analysis and simulations for nominal sail forces, drag, trajectory, and thermal analysis
- Oversaw and actively participated in the manufacturing process, from 3D printing to machining
- Prepared and created industry level documents for proposals
- Wrote design, testing, interface control, assembly, and manufacturing documents
- Managed six student engineers of different concentrations from mechanical, electrical, software, and telecommunication systems
- Presented research and prototype at the National Space Grant Consortium in DC early 2017

MyState Research CubeSat 1 (MRC1) – *Member* (2014 – 2015)

- Participated in vibration testing of the satellite to ensure spacecraft met flight requirements
- Provided troubleshooting for failed activation switch mechanism
- Participated in Root Cause Failure Analysis for MRC1
- Established an applied understanding of CubeSat development and its mechanical design

John A. Doe

phone: (123) 456-7891 | email: john.a.doe@gmail.com | portfolio: horizonone.net

Technical Skills

- SolidWorks
- MATLAB, NX
- AGI Systems Toolkit (STK)
- Python, HTML, CSS, JavaScript
- Autodesk AutoCAD, Civil 3D, 3ds Max, Inventor
- COMSOL Multiphysics
- Adobe Photoshop, Illustrator
- Microsoft Word, Excel, PowerPoint, Project

Education

Master of Science in Astronautical Engineering | University of Southern MyState (USM)
December 2019 (expected) | GPA: 3.28

Bachelor of Science in Mechanical Engineering | University of MyState (UM)
December 2017 | GPA Cumulative: 3.21 | Junior/Senior Year: 3.60

Involvements/Hobbies

- Member of American Society of Mechanical Engineers (ASME)
- Member of American Institute of Aeronautics and Astronautics (AIAA)
- Project leader for senior design (Capstone Project)
- 3D modeling and texturing, designing, and creating applications
- Working on an open-source modular CubeSat architecture and template
- Hiking, mountain biking, fishing, kayaking, running, snowboarding, reading, and learning new material

Personal On-Going Projects

Open Source Modular CubeSat Architecture (2017 – Present)

Developing an open source CubeSat/SmallSat modular structure and baseline architecture for COTS and predefined components. Preliminary calculations, analyses, and modular structural components will be developed, creating a foundation for people to develop a CubeSat.

- Modular spacecraft structural design for 1U and 3U systems
- Power simulations to determine power generation at various orbit locations
- COTS Hardware selection and integration
- Power/mass/link budget calculations and defined power modes and scenarios
- To Do: Setup and perform vibration, thermal, stress/force simulations

Mobile App Development & Game Development (2016 – Present)

I have released one android application on the Google Play Store. I enjoy programming and solving the problems associated with it.

- Learned to use the Unity Engine to develop C# mobile applications
- Created graphical user interfaces, implemented audio, and in-game graphics
- Applied 3D modeling and texturing knowledge to develop 3D models for games

Publications

[1] Rimsha Bloom, Nataniel Duarte, Nabeela Frank, Lia Bob, Ben Bradley, Manav Maddox, John Doe, Kay Hoover, Everett Melia. *TACKS CubeSat Rendezvous, Attachment, Tracking, and Collision System.* IAA Aerospace 2018