Lucy Huddleston-Vincent

(404) 510-1639 ♦ Lhuddleston6@gatech.edu ♦ ycullucy28@gmail.com
www.linkedin.com/in/lucyhuddleston
www.lucyhuddleston.com

Skilled engineer and researcher currently breaking into data science. Experience applying data science and machine learning techniques to research, modeling and simulation, systems engineering, design, and optimization.

Skills

- Modeling and simulation of complex systems, incorporating surrogate models and advanced design methods into sizing and synthesis of aircraft, missile, and space systems
- Research and chemical process development
- Data analysis and mathematical modeling of physical processes
- Application of Design of Experiments (DOEs), Multi-Attribute Decision Making methods, and Optimization algorithms
- Statistical Analysis using JMP and R
- Web design and mobile app design: HTML, CSS, PHP, JavaScript, Django, CodeIgniter, Android Studio
- Computer programming in Python, Java, and C++
- Writing technical reports, and preparing and giving technical presentations
- Microsoft Office: Excel, Word, and PowerPoint
- Soldering, machining, welding, and manufacturing carbon fiber parts
- Dedicated hard worker; comfortable working solo or as part of a team

Experience

Aerospace Systems Design Laboratory (ASDL), Atlanta, Georgia -------------------(May 2017 to present)
Graduate Research Associate

- Currently using data science and machine learning methods to develop Mass Estimating Relationships for Liquid Rocket Engines to be used in conceptual design of lunar landers and incorporated in sizing/synthesis/optimization tools
- Currently developing a geometry reasoning and mass properties estimation tool in Python for conceptual lunar lander design which outputs possible lander configurations for given component geometry
- Developed a modeling and simulation environment for missile solid rocket motors as the Propulsion System Lead for the 2017-2018 AIAA Missile Design Competition team; Used surrogate models and DOEs to optimize the design of a long-range torpedo delivery system
- Developed trajectory models for analyzing navigation sensor performance and estimating combined sensor performance for Draper; Used an artificial neural net (ANN) to create an automated decision making program to optimize navigation sensor architectures for any given environment and/or mission type
- Designed web interface for and collaborated on development of a dynamic, model-based Mission Planners Guide for the Space Launch System (SLS) with NASA's Advanced Concepts Office

NASA MSFC Advanced Concepts Office, Huntsville, Alabama ---------------(May 2018 to August 2018)
Graduate Intern

- Developed a planetary protection plan for the Mars Ascent Vehicle Solid Rocket Motor (SRM) to prevent biological contamination of the Martian surface; Investigated current and proposed methods for sterilizing solid rocket motors including Dry Heat Microbial Reduction (DHMR),

radiation, ethylene oxide incorporation, and bio-barriers
- Performed risk reduction assessment of naturally aged SRM hot fire test
- Performed 3D modeling and printing of SLS and space vehicle scale models

Polymer Aging Concepts Inc., Dahlonega, Georgia--------------------(September 2013 to December 2016)
Laboratory Manager / Research Analyst
- Constructed and executed research projects and ran lab trials to further primary company research into aging of plastics, rubbers, solid rocket fuels, and other polymers
- Co-developed process techniques and trial plans throughout entire development process of several formulations of age monitoring sensors; Designed sensors to mimic aging characteristics and be similar in composition to solid rocket propellants and blowout prevention rubber
- Developed method used for initial quality assessment and degradation prediction of rocket propellant age monitoring sensors
- Improved and greatly expanded the mathematical model used for correlating sensor degradation and rocket propellant degradation
- Assisted in writing final technical reports for multiple Department of Defense contracts
- Participated in technical presentations given to contract technical monitors and other high-ranking personnel from government agencies and contractors
- Assisted in manufacturing projects involving packaging design and fabrication
- Interfaced with field experts and personnel from organizations including the Missile Defense Agency, Orbital ATK, Aerojet Rocketdyne, Army CRADA, and the Air Force Research Laboratory

Vendormate Inc., Atlanta, Georgia ---(June 2009 to July 2014)
Credentialing Analyst / Receptionist
- Verifying medical documents and credentials for sales representatives visiting registered hospitals

Education and Training
Georgia Institute of Technology --- (May 2017 to December 2019)
Master of Science in Aerospace Engineering, GPA: 3.57
- Focus in Combustion/Thermodynamics and Fixed Wing Design/Optimization

University of North Georgia --(August 2009 to May 2013)
Bachelor of Science in Physics, GPA: 3.35
- Additional classes in computer science, web design, mobile app design (Jan 2015 to May 2016)

Lanier Technical College ---(July 2010-June 2011)
Engine Builder Certificate
- Additional classes in machining, welding, fabrication, carbon fiber manufacture

Professional Organizations/Community Service
National Association of Rocketry (NAR)--(October 2016 to present)
- Level 1 High Power Rocketry Certification

American Institute of Aeronautics and Astronautics (AIAA)--------------------- (November 2016 to present)
Yahoola Outdoors--- (January 2016 to May 2017)
- Web developer and helped organize annual 5K

Gamma Sigma Sigma National Service Sorority --------------------------------------- (January 2011-May 2013)