Jeffrey A. Houston

jehousto@syr.edu ◦ 856 E Broadway, Unit 3, South Boston, MA 02127 ◦ +1 (908) 432-9369
https://jiffipop.github.io/portfolio/ ◦ https://www.linkedin.com/in/jeffreyalanhouston/

OBJECTIVE: To secure an engineering job in the Northeastern United States region

EDUCATION:

Syracuse University, College of Engineering and Computer Science — August 2016 – May 2020
Bachelor of Science, Aerospace Engineering, GPA: 3.1
Syracuse University Abroad at Florence, Italy

SKILLS:

Technical: SolidWorks, AutoCAD, Femap, Ansys Fluent, Workbench, Simulink, Microsoft Office Suite
Programming: MATLAB, Python, CSS, HTML

ENGINEERING APPLICATIONS:

Northrop Grumman Corporation, *Associate Mechanical Engineer - Pathways Program* — September 2020 – Present

- Simulated acceleration spectral density (ASD) response of electromechanical components to random vibration in Femap
- Reduced time to develop component level test specification by 80% by creating MATLAB algorithm to take in ASD data from Femap simulation, and output ASD data that meets NASA's minimum workmanship and shaker table specifications
- Participated in development of program Preliminary Design Review (PDR) and Critical Design Review (CDR)

Aerospace Engineering Senior Design Competition, *Curriculum* — January 2020 – May 2020

- Created parts and assembly of aircraft design in SolidWorks based on specifications used in conceptual design review
- Predicted the aircraft's weight and balance, stability, optimal size, and flight performance be writing MATLAB scripts
- Verified the assumed thrust by experimentally obtaining data for thrust-endurance curve of motor
- Verified structural stability by simulating wingtip loading tests using structural finite element analysis software
- Evaluated and determined optimal material choice to optimize overall system performance

Syracuse University Bionics and Control Systems Laboratory, *Mechanical Design Engineer* — May 2019 – August 2019

- Developed mechanical design of exoskeleton suit to fit patients of body types within 99% of the population
- Designed and manufactured controls system testbed with actuation and measurement methods for joints in exoskeleton suit
- Created drawings and bill of materials for exoskeleton suit parts and assemblies using GD&T and DFM in SolidWorks
- Fabricated aluminum and 3D printed parts for the exoskeleton with milling machine, bandsaw, CNC machine and 3D printer
- Calibrated and controlled hacked treadmill motor using Simulink and MATLAB to implement safety system

Mechanical and Aerospace Lab, *Curriculum* — September 2018 – December 2018

- Measured aerodynamic forces in MATLAB on a Clark-Y airfoil mounted to a sting balance through use of a wind tunnel
- Investigated vortex shedding downstream of a cylinder with an accelerometer attached inside
- Compared three-dimensional flows and two-dimensional flows by measuring pressure induced drag on various cylinders
- Analyzed boundary layers around a cylinder and formation near the wall of the wind tunnel using a pitot-static tube rake
- Performed tensile stress testing on metals, plastics, and polymers on an MTS testing machine utilizing an extensometer to ultimately draw conclusions on each materials' physical properties based on their respective stress-strain curve
- Calculated natural frequency of a cantilever from fast Fourier transformations of data in the time domain using MATLAB

MIDI Controller Prototype Development, *Self-directed* — May 2018 – October 2018

- Designed musical instrument digital interface (MIDI) controller circuit on breadboard using an Arduino
- Wrote code in Arduino software to convert analog signal to digital form to be used with any digital audio workstation (DAW)
- Developed 3D printed electronics enclosure using SolidWorks to house components with design for assembly (DFA) in mind

WORK EXPERIENCE:

Forte Pizzeria & Ristorante, *Delivery Driver* — May 2017 – August 2018

- Drove deliveries to customers' location and assisted with in-restaurant responsibilities such as helping cooks and customers

Sorrento's Pizzeria, *Delivery Driver* — October 2015 – June 2016

- Took customers' orders in person and over the phone, prepared food, and delivered orders to the customers

LEADERSHIP/ACTIVITIES:

Society for Asian Scientists and Engineers (SASE), *Member* — September 2019 – May 2020
American Institute of Aeronautics and Astronautics (AIAA), *Member* — October 2017 – May 2020
The GREEN Program, *Participant* — June 2017 – July 2017

- Studied and compared forms of renewable energy at Reykjavík University throughout program in Iceland

Boy Scouts of America, *Eagle Scout* — October 2004 – June 2016

- Adopted multiple leadership positions and participated in National Youth Leadership Training camp
- Participated in planning and execution of fundraisers such as Christmas tree sale, church rummage, and Chester Day