

JEFFREY ALAN HOUSTON

+1 (908) 432-9369

jeffrey.a.houston@outlook.com

25 Welsh St, Apt 1, Malden, MA 02148

<https://www.linkedin.com/in/jeffreyalanhouston/>

<https://jiffipop.github.io/portfolio/>

OBJECTIVE: Driven and bold professional seeking career advancement with an engineering role alongside focused and passionate colleagues to iteratively design, build, and test new products.

PROFESSIONAL EXPERIENCE:

Byrna Technologies, Inc.

Andover, MA

Mechanical Design Engineer

February 2022 – Present

- Led product development lifecycle (sketching product concepts, creating 150+ CAD models, 20+ engineering drawings, manufacturing and testing prototypes, facilitating transition into production, and implementing product improvements) to produce \$0.5MM in sales within 1 year of product release
- Spearheaded implementation of two variations of existing flagship products that generate an estimated annual revenue of \$1MM
- Progressed a NPI throughout concept stage by creating data pack (140+ CAD models, 50+ drawings) using legacy CAD model (.STEP file format) to produce an estimated annual revenue of \$0.7MM
- Iteratively redesigned a structural component by modeling, simulating and analyzing in FEA software (SimScale)
- Implemented product enhancement to increase projectile accuracy by 30%, (accompanied by analysis with high-speed camera)
- Ensured product quality at part level by providing production teams with thorough test procedures, templates, and updated drawings

SCHNEEBERGER, Inc.

Woburn, MA

Mechanical Engineer

March 2021 – February 2022

- Sized linear bearings for 20 customers based on expected external forces using hand calculations and proprietary FEA software
- Ensured customer-specific requirements (straightness, flatness, pitch, yaw) were met on new products via interferometry testing
- Reduced cost of optical fixtures/components by 70% by reverse-engineering components and redesigning supply chain
- Automated data processing tasks for assemblers by creating custom software application in Python
- Maintained documentation by creating test procedures and assembly instructions for two 3-axis linear motion stages
- Successfully troubleshooted various software (C#) and hardware issues with ACS Motion controllers (CMhp)
- Tuned rotary motors in dual loop with linear feedback in SPiiPlus software using control theory to optimize performance
- Improved manufacturability by changing parts via ECOs/ECRs for two systems in production
- Provided technical support on company's products to internal employees and customers

Northrop Grumman Corporation

Azusa, CA

Associate Aerospace Engineer - Pathways Program

September 2020 – March 2021

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

Syracuse University Bionics and Control Systems Laboratory

Syracuse, NY

Mechanical Design Engineer

May 2019 – August 2019

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

SKILLS:

CAD: PTC Creo (incl. Windchill), Autodesk Inventor, SolidWorks, AutoCAD, Keyshot

Technical: SPiiPlus MMI Application Studio, Ansys Fluent, Femap (NX Nastran), Simulink

Programming: Python, MATLAB, CSS, HTML

Documentation: MS Office (Excel, Word, PowerPoint)

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

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 Reykjavik 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