Jeffrey Alan Houston

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OBJECTIVE: Driven and bold professional seeking career advancement with an engineering role alongside focused and passionate colleagues to iteratively design, manufacture, and test new products in a fast-paced and dynamic environment.

# PROFESSIONAL EXPERIENCE:

## Byrna Technologies, Inc. Andover, MA

### Mechanical Design Engineer February 2022 – Present

* Designed 6 parts to be machined and injection molded at a 15% cost reduction to top-level BOM by simplifying, and optimizing parts for DFM/DFA
* Created a less-lethal ammunition consisting of 9 unique plastic injection molded parts for high volume manufacturing (>200k)
* Built and tested assemblies using 3D printed prototype parts in multiple materials to represent injection molded components
* Performed structural analysis for launcher parts using hand calculations, Creo Simulate, and SimScale FEA to validate part design
* Liaised with suppliers to implement DFM, ensure milestones are met on time, and resolve out-of-spec parts
* Implemented 30 new parts into production by creating 3D CAD models, 2D drawings with GD&T callouts (ASME Y14.5)
* Presented summaries and prepared reports of comprehensive product performance data by creating and maintaining test procedures and data templates to be executed by a dedicated testing team
* Led design review to acquire feedback from other engineers, supply chain, management, and external suppliers
* Led new product introduction (NPI) from concept to production to produce $0.5MM in sales within 1 year of product release
* Created prototype parts by modifying existing parts using drill press and grinding wheel

## 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 processing of thermocouple data by creating custom software application in Python
* Implemented design improvement to change linear encoder location based on customer feedback
* Maintained documentation by creating test procedures and assembly instructions for two 3-axis electromechanical systems
* Successfully troubleshooted various software (C#) and hardware issues with ACS Motion motor controllers (CMhp)
* Modified out-of-spec machined parts as needed and fabricated new sheet metal prototype by hand using milling machine
* Provided technical support on company’s products to internal employees and external 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

## Syracuse University Bionics and Control Systems Laboratory Syracuse, NY

### Mechanical Design Engineer May 2019 – August 2019

* Designed and fabricated mechanical frame for adjustable exoskeleton suit to fit any patient using extruded aluminum and 3D printed parts manufactured with milling machine, bandsaw, CNC machine and 3D printer
* Designed and built controls system testbed with servo actuation and encoder feedback to control joints in exoskeleton suit
* Calibrated and controlled modified treadmill motor using Simulink and MATLAB to implement emergency stop system

# SKILLS:

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

*Technical: Creo Simulate,* Ansys Fluent, Femap (NX Nastran), SimScale, Simulink, SPiiPlus MMI Application Studio

*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**

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

* Adopted multiple leadership positions and participated in National Youth Leadership Training camp