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, 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 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