JONATHAN RILEY

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Diligent Product Design Engineer with experience in consumer electronics. Proven history of developing rapid prototypes and testing to ensure product quality meets company expectations. A strong collaborator with excellent communication skills.

EDUCATION

Duke University, BSE Mechanical Engineering, Innovation & Entrepreneurship Certificate, May 2022 **GPA:** 3.34/4.00

SKILLS

2D/3D CAD | Tolerance Analysis | FEA and GD&T | Machining/Milling | Python/MATLAB | Solidworks

PROFESSIONAL EXPERIENCE

Amazon Lab 126 **August 2022 – Present**

Product Design Engineer, Bellevue, WA

Member of the Bellevue Hardware team, whose primary focus was developing Halo Health and Wellness Devices.

- Strengthened engineering fundamentals by creating tolerance loops, completing failure analyses, and developing rapid prototypes to provide informed design recommendations for cross-functional teams.
- Applied top-down and skeleton modeling basics for new technology investigations on Amazon Halo devices.
- Collaborated with foreign contract manufacturers to create parts and design test procedures for Amazon products.
- Utilized CT scanning, and microscopic imaging to understand adhesion and cracking failures on the Halo View bands.

Ford Motor Company **May 2021 – July 2021**

Feature Management Team (Remote), Dearborn, MI

- Developed a conceptual analysis of the Zone Lighting Feature to create a framework for future feature improvement.
- Benchmarked hardware components and software connections to uncover potential cost savings and competitive advantages.

Edwards Lifesciences **June 2020 – August 2020**

Strategy and Execution Team (Remote), Irvine, CA

- Developed high-level visual analysis for all transfer projects managed within the Global Supply Chain network. Analysis was utilized to increase project visibility and resource management for 70+ projects in the 2020 and 2021 fiscal years.

PROJECTS

Senior Design – ReLeaf Palm Nut Dryer **August 2021 – May 2022**

Duke University, Durham, NC

Worked with ReLeaf to improve their toaster design to better dry palm nuts to create crude vegetable oil.

- Built a 1:4 scale model of the existing ReLeaf toaster using aluminum sheets and metal extrusions to test methods of improving palm nut drying efficiency resulting in a ~300% improvement in moisture removal.
- Modeled test system in Solidworks and conducted FEA and Stress Analyses to validate design decisions.

Independent Study – Hydroponic System Design **August 2020 – August 2022**

Duke University (Remote), Anchorage, AK

Developed a hydroponic system that would allow for small herbs/leafy greens to be grown autonomously.

- Used Arduino Circuits and CAD Design to create a system for $40, which is cheaper than commercially available systems.
- Sourced components for and designed a PCB circuit to provide customized light spectrums to plants for each stage of growth.

Independent Study – Piezoelectric Tile Design **January 2021 – May 2021**

Duke University, Durham, NC

Designed a compressive tile that converted kinetic energy into electric energy and stored energy for future use.

- Used circuitry, electric coils, and magnets to design a piezoelectric tile for $10 mimicking existing tile designs that cost ~$150.

Research Assistant (Aeroelasticity Group) **September 2019 – May 2020**

Linear Cascade (LASCADE) and Airfoil Rig Projects, Durham, NC

- Designed in Solidworks a component blade support that allowed for the oscillation of the middle blade in a seven-blade compressor linear cascade. Also, improved blade strength to ensure the blade remained functional after continuous testing.

Rube Goldberg Machine Design **November 2019 – December 2019**

Duke University, Durham, NC

- Designed an RG Machine to transport a golf ball through a series of Mario-themed passes using solenoids and photoresistors.

Gastroschisis Solution Design **August 2018 – December 2018**

Duke University, Durham, NC

- Developed a $1 silo to treat gastroschisis in countries that can't afford $240 silos in partnership with Duke Hospital.

LEADERSHIP AND INVOLVEMENT

National Society of Black Engineers (Duke University) **September 2018 – May 2022**

- *Former Executive Roles:* Vice President (2021-2022) Programs Chair (2020-2021), Finance Chair (2019-2020)

Black Men's Union **September 2018 – May 2022**

- *Former Executive Roles:* Treasurer (2021-2022) Programming Co-Chair (2020-2021), Communications Chair (2019-2020)

Eagle Scout Bronze Palm **June 2017 – Present**