Jonah Offman

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EDUCATION

Johns Hopkins University, Whiting School of Engineering — Baltimore, MD
Master of Science in Engineering Management, Mechanical Engineering Concentration — August 2021- May 2022

Johns Hopkins University, Whiting School of Engineering — Baltimore, MD
Bachelor of Science in Mechanical Engineering, Minor in French — September 2017- May 2021
GPA: 3.86

Honors and Awards: William N. Sharpe Jr. Convocation Award Recipient, Pi Tau Sigma Mechanical Engineering Honor Society, Charles C. Diggs Scholarship Recipient, Dean's List (Fall 2017 – Spring 2021), 2020 CoSIDA Academic All-District Team, Centennial Conference Academic Honor Roll (2019-21)

SKILLS & COURSEWORK

Software Engineering:
- Software Development in Python, MATLAB, and C++
- Data Analysis - Databricks, PySpark, Pandas, and SQL
- Agile Workflow (with Jira)
- Version control using Git

Mechanical Engineering:
- Computer-Aided Design in SolidWorks and CREO
- Manufacturing and machining processes
- Design thinking
- Technical drawing using GD&T

Additional / Soft Skills:
- Fluent in French
- Collaboration
- Communication
- Problem-solving
- Time management
- Leadership

Coursework: Robot System Programming (ROS / Linux), Algorithms for Sensor-Based Robotics, Robot Devices / Kinematics / Dynamics / Control, Mechatronics, Robotic Sensors and Actuators

WORK EXPERIENCE

Johnson & Johnson, Robotics and Digital Solutions — Redwood City, CA
Robotics Software Engineer — July 2022- Present
- Created a Python framework for the development and deployment of algorithms for both performance analysis and preventative maintenance, including comparing model and sensor gravity effort, determining arm workspace, and monitoring joint temperatures and torques
- Developed a data analysis tool using Databricks Delta Tables and PySpark to automatically run the analysis algorithms on over 3 years of telemetry data from the MONARCH platform in the field to easily determine and display key findings

Robotics Software Engineering Intern — May 2021- July 2022
- Developed a Python package based on existing C++ kinematics framework in order to speed up and simplify the testing and prototyping processes for members of the Software for Robotics motion Control (SRC) team
- Created a Python library using a B0-based Remote API to read in joint configurations and end-effector poses from .csv files in order to visualize robot motion and position in the CoppeliaSim robotics simulation software
- Wrote a model to calculate the joint gravity effort torque for the Kinova robot arm in steady-state conditions and built a Docker container to deploy the model to analyze data from MONARCH robot data

Johns Hopkins Center for Neuroplastic Surgery Research — Baltimore, MD
Design Engineer — August 2020 – May 2021
- Member of the senior design team responsible for the design and implementation of test methods for a novel hollow cranial implant used for drug delivery in glioblastoma (GBM) patients
- Using Arduino and attached sensors for data acquisition and measurement, CAD software for structural design and planning, and researching published testing standards through outlets such as ASTM in order to help the implant receive FDA approval

Department of Mechanical Engineering, Johns Hopkins University — Baltimore, MD
Undergraduate Teaching Assistant — October 2020 – May 2021
- Teaching assistant for Manufacturing Engineering (Fall 2020) and Design and Analysis of Dynamical Systems (Spring 2021)
- Responsible for office hours, explaining class concepts, grading, and management of the Blackboard system for the courses

Matri Design — Remote
Summer Intern — June 2020 – September 2020
- Created hierarchal glyph-based 3D data visualizations using the ANTz software, based on Vera Institute of Justice datasets
- Used Python and Anaconda packages system to clean and process data in order to produce parent-child node glyph structures

International Analytics Group Remote
Project Developer June 2020 – August 2020

- Developed baseball statistic-based math problems for a nationwide math tournament in Mexico
- Created over 50 written pages of content to educate students on baseball's history and impact on the country of Mexico

Hopkins Extreme Materials Institute, Johns Hopkins University Baltimore, MD
Research Intern May 2019 - February 2020

- Performed Pressure Shear Plate Impact and Split-Hopkinson bar experiments and processed data in MATLAB
- Manufactured boron carbide specimens using EDM, lapping, and polishing techniques
- Participated in the HEMI Summer Intern Research Symposium with a poster entitled *High Strain Rate Multi-Axial Loading Behavior of Granular Boron Carbide*

Center for Student Success, Johns Hopkins University Baltimore, MD
Calculus Tutor September 2018 – April 2019

- Clarified and reviewed Calculus I and II concepts with students by working through practice problems
- Helped students develop effective study, note taking, and test taking habits

Spire Philanthropy Toronto, ON
Summer Intern May 2018 – August 2018

- Focused on client outreach and developing new charity-business marketing partnerships
- Conducted market research to identify and connect charities with companies possessing similar target markets

EXTRACURRICULAR EXPERIENCES

Johns Hopkins Blue Jays Varsity Baseball
Right-Handed Pitcher September 2017 - May 2022

- 2021 and 2022 team captain, working to mediate and strengthen the relationship between the coaching staff and the players, helping underclassmen adjust to college, and building relationships with the community
- Have developed skills such as leadership, time management, responsibility, accountability, and the ability to thrive under pressure as a student-athlete

Sports Analytics Club
Team Member February 2020 - Present

- Member of Pytch Design and FldrOp projects, with support from Dr. Anton Dahbura and Baltimore Orioles representatives
- Helping to develop Python packages to determine outfielder range and optimal off-speed pitch characteristics depending on factors such as spin rate, spin axis, release height, and movement profile

ADDITIONAL SKILLS & COURSEWORK

Skills:

- Microsoft Office & G Suite
- Finite Element Analysis (FEA) in ANSYS
- Control systems
- Robotic sensors, controllers, and actuators
- Object-oriented programming
- Project management

Coursework:

- ***Engineering****:* Mechanics I & II, Dynamics, Statics, Mechanics Based Design, Fluid Mechanics, Thermodynamics, Materials Selection, Heat Transfer, Electronics and Instrumentation, Manufacturing Engineering, Dynamical Systems
- ***Coding:*** MechE Computing (MATLAB), Scientific Programming in Python, Business Analytics (Excel)
- ***Other:*** Introduction to Computer-Aided Design, Calculus I-III, Linear Algebra, Differential Equations, Probability / Statistics