

Simonne Ponce

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EDUCATION

Johns Hopkins University - Whiting School of Engineering

Bachelor of Science

Baltimore, MD

Expected May 2026

- Major: Mechanical Engineering
- Minor: Mathematics
- Relevant Coursework: Mechanical Engineering Design & CAD, Manufacturing Engineering, Materials Selection, Mechanics-Based Design, Electronics & Instrumentation, Multidisciplinary Design
- Teaching Assistant for Design Cornerstone Course

PROFESSIONAL EXPERIENCE

Manufacturing Process & Equipment Engineering Intern

Tesla, Inc. @ Gigafactory Texas

Austin, TX

January 2024 - August 2024

- Optimized production for the 4680 Battery Cell for the Cybertruck, focusing on the cell's jelly roll welding manufacturing processes
- Designed and 3D-printed a quick-disconnect jig in SolidWorks for cell quality testing, decreasing false failures by 89%; created 3D CAD parts, assemblies, and exploded views
- Drafted 2D CAD technical drawings for prototype fabrication via outsourced manufacturing and in-house lathe/mill machining
- Created, coded and deployed 30+ interactive Tableau dashboards with tool performance, yield, material input, etc. to diagnose root causes of major yield losses and visualize frequency of cell manufacturing defects
- Led installation and deployment of an automated sample collection process across production lines, reducing cell production downtime by 54.5%
- Recalibrated welding hardware equipment by adjusting laser parameters, actuators, and sensors to reduce frequency of manufacturing defects; leveraged statistical process control (SPC) data to optimize weld strength and laser accuracy
- Analyzed SQL-extracted operational data via JMP and Minitab to inform tool recalibration decisions and identify yield loss drivers
- Determined root cause of mechanical failures using SPC analysis, SQL queries, and physical inspections of machinery to prevent manufacturing defects
- Conducted quality control testing, visual inspections, and dissection of cell samples to verify compliance with control and specification limits

Automation Engineering Intern

Daikin Comfort Technologies

Waller, TX

June 2023 - August 2023

- Developed synergetic robotic system to aid in manufacturing processes, minimize operator risk exposure, and increase efficiency on assembly lines
- Analyzed PTAC and 80% Furnace Line specifications—BOMs, throughput, takt times, layouts, downtime, and injury statistics—to identify automation opportunities
- Designed, created, and proposed robot automation project set to reduce sub-assembly line takt time by 57.6%
- Created a SolidWorks assembly of over 1,100 parts for assembly line re-design of proposed automation project
- Programmed a visual robot simulation of redesigned PTAC assembly line using Roboguide Software for two lifting & grommet-placing robots
- Conducted cost analysis, labor savings, and injury savings to predict a 2-year payback period on proposed automation project investment
- Identified 4 position reduction opportunities & proposed operator relocation to improve operator safety
- Presented automation proposal to shareholders, VPs, and other important stakeholders

KEY PROJECTS

Product Design Lead, Animal Enrichment Tracker Device

September 2024 - May 2025

- Led the design and product development of "TailTagger" from concept to deployment in habitats; a device for tracking animal interaction with enrichment equipment at the Maryland Zoo
- Designed water-resistant, durable, and non-toxic electronics housing in SolidWorks, producing iterative prototypes via FDM 3D printing suitable for animal habitats

- Integrated Arduino Nano, RTC Module, and SD Card Reader to log hourly animal interaction with each enrichment device; soldered all electrical components and ensured seamless hardware-software integration
- Coordinated collaboration among a multidisciplinary team of Chemical Engineering, Computer Science, and Mechanical Engineering students to drive design, prototyping, and testing

Stirling Engine Project, Individual Manufacturing Engineering Project

September 2023 - December 2023

- Built a stirling engine, fabricating engine components to design specifications using the lathe and vertical mill
- Manufactured aluminum flywheel by sand-casting, band-sawing bulk material, turning, and chamfering on lathe to achieve polished surface finish and precise dimensions
- Machined piston wheel by facing, turning, chamfering, parting, and reaming raw stock material on lathe; performed edge-finding and drilled countersunk holes using vertical mill
- Fabricated flywheel post by end-milling, reaming, and drilling material to meet dimensional tolerances on vertical mill
- Interpreted 2D CAD drawings to ensure machining processes met design and tolerance requirements
- Assembled and secured all components to structural base using fasteners

Mechatronics Design Lead, Arduino-Programmed Human-Interactive Animal Project

January 2022 - May 2022

- Led the design and construction of dual rack and pinion system powered by stepper motors to enable forward animal movement, increasing range of motion
- Coded Arduino program to control servo motors, activate break-beam sensor for eye illumination, and synchronize dual stepper motors for coordinated movement
- Optimized electrical circuit wiring of breadboard connections for motion sensors and actuators, improving system reliability
- Collaborated with teammates to design and construct the interactive environment

SKILLS

- SolidWorks (3D/2D CAD Design, Assembly Modeling, and Drafting)
- Creo Parametric (3D/2D CAD Design, FEA/FEM, Simulations)
- 2D CAD Technical Drawing: Orthographic Projection & Isometric Views for Product Components
- Design for Manufacturing (DFM), Design for Assembly (DFA), Lean Six Sigma, Design of Experiments(DOE), GR&R
- Iterative Rapid Prototyping: 3D Printing (FDM), Laser Cutting (Universal Laser Systems & UCP Software)
- Knowledge of high-volume manufacturing techniques (stamping, injection molding, etc.)
- Manufacturing: Lathe & Mill Machining, MIG Welding
- Basic Machining: Soldering, Bandsawing, Drill Pressing, Sheet Metal Shearing, Tube Bending
- FANUC Roboguide HandlingPro Simulation Software
- Granta EduPack Software for Materials Selection & Sustainability Analysis
- Programming Languages: Matlab, SQL, Java, C, C++
- Arduino and Microcontroller Integration
- Data Analysis: Statistical Process Control(SPC), DBeaver, Tableau, Minitab, JMP
- Quality Control: Product Change Approval(PCA) and Audits
- Siemens Simatic HMI Panels, IntelliMESUR, Nx Witness, Laser Diagnostics, FileZilla, LabVIEW
- Bench Equipment: DC-Power Supplies, Oscilloscopes, Multimeters, etc.
- Microsoft and Google: Excel, Powerpoint, and Word
- Project Management: JIRA, Confluence, Opsgenie
- Communication, Teamwork, and Collaboration skills
- Troubleshooting, Testing, and Data Analysis skills

EXTRA CURRICULAR ACTIVITIES

- Member: American Society of Mechanical Engineers (ASME), Theta Tau Professional Engineering Fraternity (Former Athletic Chair), Women Mentoring Whiting Program (Former Event Coordinator)

LANGUAGES

English(Native), Spanish(Native), French(Limited Proficiency)