Xavier S. Johnson

Portfolio: https://xaviersjohnson.github.io/devportfolioX/
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SKILLS

Skills: SolidWorks, Siemens NX, CREO, Fusion 360, FEA (Nastran, CREO SIMULATE, Ansys), 3D Printing, GD&T, Teamcenter, Component/Part Reliability Testing, DOE, Manufacturing, DFM, Prototyping, Product Management

RELEVENT WORK EXPERIENCE

Reliability Engineering Intern
May 2024 – Aug 2024
ASML San Diego, CA
• Designed mechanical fixtures using sheet metal design in NX12 in order to implement a heating stage in a Modular Vacuum chamber
• Developed, performed calculations, and implemented a component-level test bench to test for adhesive delamination in the droplet generator
• Prototyped and created sheet metal and plastic parts to integrate different electrical modules into test chambers and improve reliability testing
• Managed 4 different projects while collaborating with mechanical design and reliability engineers, vendors, and manufacturing

Product Design Engineer Intern
May 2023 – Aug 2023
Amazon Lab 126 Sunnyvale, CA
• Designed and prototyped a universal debug fixture for devices using CREO, incorporating pogo pins, PCBA, FPC flex cable, springs, and adhering to design constraints and DFM feedback to develop an innovative solution
• Conducted rapid 3-D prototyping and initiated a D.O.E. to ensure feasibility, user-friendliness, and proper functionality of components
• Created plastic and sheet metal parts to house electrical assemblies, collaborating cross-functionally with electrical, software, and tooling engineers, as well as CMs/External Vendors, to meet specified design requirements
• Performed FEA contact analysis in CREO Simulate for removable snaps, optimizing cantilever length, lead in/out angle, and width of snaps

Hardware Reliability Engineer Intern
May 2022 – Aug 2022
Amazon Lab 126 Sunnyvale, CA
• Researched and addressed in-field issues, collaborated with failure analysis, thermal engineers, and technicians to develop innovative solutions, and analyzed experiment data
• Developed and implemented component-level tests with thermal aging to evaluate the thermal stability of various materials
• Designed, prototyped, and created drawings for a test rig, drawing inspiration from various literature - in CREO
• Revised product level validation test to match use case environment using Arrhenius model and customer data

Mechanical Engineering Intern
May 2021 – Jan 2022
Siemens Healthineers Knoxville, TN
• Conducted tolerance stack-up analysis to ensure allowable misalignment of the belt drive in the Patient Handler System (PHS)
• Assisted development engineers in building and testing the Patient Handler System through life cycle, thermal imaging, and acoustic tests.
• Also assisted in prototyping and designing sheet metal parts in Siemens NX 12 to improve safety/patient experience
• Performed machine design calculations to ensure components of PHS had allowable safety factors, allowable angle misalignments, and to find areas to improve such as using new materials, editing tolerances on drawings, and using new components

Quality/Design Engineering Intern
August 2020-Jan 2021
Bosch Home Appliances Oak Ridge, TN
• Designed different parts using principles of plastic part design in NX 12 and used 3-D printing to rapidly prototype parts
• Developed a Python script and GUI to interface with Home Connect API Simulators, enabling settings adjustments for refrigerators
• Designed parts for refrigerator assemblies and drafted new refrigerator assemblies in NX 12 and Teamcenter PDM
• Assisted quality engineers in developing a data analytical software program in Excel to reduce time sorting through failure symptom data and filter necessary information

UNDERGRADUATE RESEARCH

Undergraduate Research Assistant (Surgical Robots)
February 2021 – Sep 2021
University of Tennessee | Robotics Lab Knoxville, TN
• Contributed to research on the use of robotic camera systems in minimally invasive surgeries (MIS), involving the design of components for a product utilizing a six DOF manipulator and other electrical elements using SOLIDWORKS
• Developed innovative housings to secure PCB, MC board, antenna and electronic modules in a fully enclosed environment while creating new methods to connect the housing to a force torque sensor and an actuator assembly, in process of getting patent for design
• Enhanced actuator assembly for ease of insertion of EPMs and micromotor, while developing a method to connect this assembly to a component housing multiple electrical elements

EDUCATION

University of California Berkeley
• Master of Engineering | Mechanical Engineering – Product Design | GPA: 3.94 | GEM Fellow | Expected Graduation Date: May 2025

University of Tennessee Knoxville
• Bachelors: Mechanical Engineering | Graduation Date: May 2024