JOSEPH BRANDS

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EDUCATION

BS in Mechanical Engineering (2014 - 2018) - Oklahoma State University
Master's in Business Administration - Finance (2020 - 2024) - Wichita State University
Certifications & Licenses: Fundamentals of Engineering (FE) Exam – Passed | PE Licensure (In Progress)

CORE COMPETENCIES AND SKILLS

- **Competencies** – Structural sheet metal & machining design, corrosion prevention, avionics installations, wire harness routing & assembly, model-based definition (MBD), product lifecycle management (PLM)
- **CAD** – Catia V6/V5, Enovia PLM, Solidworks, AutoCAD, Mentor Graphics Harnessing
- **Finite Element Analysis (FEA)** – Catia V6 FEA, Solidworks Simulation, ANSYS Workbench
- **Code** – Python, Bash/Shell, Visual Basic, Docker, managing over 100TB in servers for public facing services
- **Industry Standards & Compliance** - GD&T practices, ITAR regulation, FAA Part 23 & 25, Mil-spec standards

EMPLOYMENT EXPERIENCE

ENGINEERING CONSULTING NOV 2023 – Present

Coordinating vendors and clients from a wide range of engineering disciplines to achieve innovative designs on cutting-edge, patented industrial processes as well as firearms design. Took time to travel the world between 10 countries.

- Design and development of clean sheet firearms as well as the modification of current production firearms. A heavy focus on tolerance stackup analysis allowed for great reduction in machining time and better cost control.
- Using Finite Element Analysis (FEA) to predict weak design points and load path analysis for firearms. Using hand sizing calculations to properly size and source material for the barrel and other structural components.
- Developed drawing packages for a range of client activites including general site planning and layout of an industrial material handling scheme for oil extraction in coordination with chemical and industrial engineering vendors.
- Utilized Computational Fluid Dynamics (CFD) on oil extraction equipment to validate flow patterns and explore new design concepts.

AIR VEHICLE DESIGN | TEXTRON AVIATION DEFENSE SEP 2022 – OCT 2023

Next generation airframe and AES design for the T-6 and AT-6 platforms while supporting sustaining activities on both aircraft for customers around the world.

- Design of primary & secondary structure with 3D modeling, drafting and PLM management through Catia V5 and Enovia.
- 3D harness design, drafting and manufacturing decisions through Catia V5 and Enovia PLM.
- Navigating an ITAR environment with US and international government customers.
- Working with vendor bids of avionics hardware to best fit the operational, environmental and cost constraints.
- Rapid prototype with FDM 3D printing to create specific tooling to improve the safety of line operations.

AVIONICS & ELECTRICAL SYS. MECHANICAL ENGINEER | TEXTRON AVIATION - CESSNA SEP 2020 – SEP 2022

Continuing support for Cessna 408 SkyCourier, Cessna 220 Denali and Citation 560 XLS wire harness design and installation for mechanical and electrical systems on board the aircraft.

- Design of 3D wire harness routing and supporting structure while drafting and PLM through Catia V6 and Enovia.
- Working directly with the shop on a clean sheet J-box design to choose harness materials and hardware to optimize the manufacturing timelines and keep a high-quality standard.
- Work with wiring diagram design and coordination with the electrical group to design mechanical harness installations.

AIRFRAME DESIGN ENGINEER | TEXTRON AVIATION - CESSNA JAN 2019 – SEP 2020

Working on the clean-sheet development of Cessna 408 SkyCourier in the aft cabin structural design group. Strict scheduling needs from the client required a fast-paced design environment.

- 3D modeling, drafting and PLM management through Catia V6 and Enovia PLM.
- Exposure to composite design and layup for primary structural and aerodynamic purposes.
- Communication and coordination between manufacturing, stress & fatigue, process and materials engineering groups to reach an effective solution that satisfy the constraints of all groups.
- FE analysis for preliminary optimization of seat and cargo locking rails and was validated in physical test.

MECHANICAL ENGINEERING INTERN | NEW PRODUCT DEVELOPMENT CENTER JAN 2017 – JAN 2019

- Team leadership experience with coordinating team members to meet short deadlines and coordinate with clients.
- Solidworks Simulation and ANSYS Workbench used to create innovative solutions for a wide range of clients.