THERESE JOIE ESPINO

Mechanical Engineer in Atlanta, GA | US Citizen

16.tespino@gmail.com
https://linkedin.com/in/tespino/
https://tespino.github.io/

SKILLS

Design Tools and Presentation: SOLIDWORKS, KiCAD, LTspice, ANSYS, OpenFOAM, Windaq, Adobe Suite (Premiere Pro, Photoshop), Microsoft Office Suite (Word, Excel, PowerPoint, Teams)
Computer Programming: MATLAB, Arduino (C++ based), Java, Python
Rapid Prototyping: 3D Printing (FDM and SLA), Composites (Carbon Fiber and Fiberglass Wet Layups), Soldering, CNC / Manual Mill, Lathe, Router, Waterjet, Plasma Cutter, Laser Cutter, Bandsaw, Plastic Injection Molding, Sheet Metal Bending, TIG Welding
General Use: Solid and Surface Modeling, FEA, DFM/A, Drawing Packages, GD&T, Bills of Material, PCB Layout, Part Material and Sizing, Bench and Site Testing, Photography and Video Editing

EXPERIENCE

Mechanical Engineer II | Earthly Dynamics | Roswell, GA ***Feb 2022 - Present***

- Designed competition-sensitive airdropped auto-derigging system, autonomous drone, and landing gear; electrical and mechanical hardware survived cyclical impact, vibrational, and extreme thermal testing.
- Responsible for taking prototypes from concept to completion, working cross-functionally with electrical, software, and production teams, evaluating systems at flight test sites, and presenting findings to clients.
- Led production line for airdrop system cutting assembly time by 40%; tasks included organizing an assembly binder, sourcing parts, technician training, FOD control, quality checks, and bench testing.
- Edited PCB using KiCAD and potted components to prep for high-vibration environments.

Mechanical Engineer Intern | Area-I | Marietta, GA ***Aug 2020 - Jan 2022***

- Responsible for the design, manufacturing, and testing of a pneumatic launcher; tasks included hand calculations, FEA (structural and modal analysis), design reports and procedure, drawing packages using GD&T, bills of materials, floor fabrication, and bench testing.
- General use of shop tools and machines for rapid prototyping small projects: temperature regulator, payload twist lock interface, and a launching slug.
- Setup testing rigs for high altitude weather and pneumatic subsystems using Arduino and Windaq (data acquisition box and software), sensors, and MATLAB for post-processing data.
- Performed composite layups to prototype UAV fuselage concepts in-house before final design selection.
- Reverse engineered an OTS backshell to reduce part cost by 90%.

Mechanical Engineer Intern | ENERCON | Kennesaw, GA ***Jun 2020 - Aug 2020***

- Completed design manual markups for time sensitive reviews and audits.
- Sorted through P&ID and nuclear cooling drawings to calculate re-estimates for volumetric total and flowrate.
- Performed factory tests on equipment to gather data outputs, document hazards, and improve in-field procedures.

PROJECTS

Undergraduate Researcher | Nuclear Energy, Science, and Engineering Laboratory | Marietta, GA ***Jan 2019 - May 2021***

- Built pebble bed reactor CFD simulations using OpenFOAM; tasks included literature and parameter research, meshing, and simplifying boundary conditions.
- Analyzed pebble packing sizes and arrangements to compare heat transfer efficiency for real-life versus experimental values which led to a proposed hexagonal configuration.

Suspension Team Member | Formula SAE | Marietta, GA ***Apr 2019 - May 2020***

- Designed and manufactured wishbone-style control arms using shop machines and SOLIDWORKS features: 2D and 3D CAD drawings, FEA (cyclic and structural analysis), CAM (HSMWorks).
- Compiled control arm research, calculations, fabrication, and lab tests in a team report which assessed design failures and successes that led to the final design.
- Wrote a MATLAB program to determine maximum forces and optimal wall thickness which reduced redundant hand calculations and subsystem weight by 40%.

EDUCATION

Kennesaw State University ***Dec 2021***
Bachelor of Science: Mechanical Engineering
Minor in Nuclear Engineering