Royce Dias

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"Structural analyst with 2 years' experience in the Space and Defense industry, looking for a Mechanical Analysis role. Experience building and analyzing FEA models of electronics packaging, tooling fixtures, and components of deployable space structures. Experience with bolted joint analysis, hand calcs, linear and non-linear materials, contacts, beam, plate, and solid elements."

WORK EXPERIENCE

Senior Associate Structural Analyst (Level II)   **Melbourne, Florida**
L3Harris   January 2022 – April 2024

- Did structural analysis on a broad range of assemblies & piece parts for a variety of Space & Defense programs, with the goal of recovering stresses and looking at max deflections/strains to define failure.
- Utilized a variety of element types (beams, rigids, solid, and plate) and the full capabilities of the FEMAP meshing toolkit (extruding mesh, mapped meshing, setting mesh size on curves, etc.) to build accurate FEMs while keeping element count to a minimum.
- Analyzed materials in both the linear and non-linear regime, from metallics (aluminum, steel, copper) to adhesives, silicone liners, and Teflon.
- Used NASTRAN as the primary solver for linear static (SOL 101), modal (SOL 103), buckling (SOL 105), non-linear static analysis (SOL 106), along with extensive use of contact elements, glued contact, and bolt preload.
- Used hand calcs & FBDs to do classic stress analysis of various piece parts.
- Thoroughly documented and communicated the process, assumptions, and results of all my analyses to fellow structural analysts and other engineering peers.
- Utilized FEM models to run trades and iteratively improve designs while working in conjunction with other structural analysts and design engineers on the team.

PROJECTS

FEA Project - Structural Analysis of a Pedestrian Bridge   **Atlanta, Georgia**
                                                                                    March 2021 – May 2021

- Performed fatigue and static structural FEA using ANSYS.
- Performed mesh convergence studies to choose the best element type and size.
- Validated, using hand calculations & equations from Shigleys, the results of the fatigue study.

CFD Project - Vortex Induced Vibrations in Shell & Tube Heat Exchangers   **Atlanta, Georgia**
                                                                                    March 2021 – May 2021

- Used ANSYS Fluent to model fluid cross flow in a shell & tube heat exchanger.
- Used the model to analyze shear stresses and vibrations in the tubes due to vortices.

EDUCATION

Georgia Institute of Technology   **Atlanta, Georgia**
Master of Science, Mechanical Engineering   December 2021
- **Graduate GPA:** 4.00/4.00
Bachelor of Science, Mechanical Engineering   December 2020
- **Undergraduate GPA:** 3.58/4.00

SKILLS

Relevant Courses: Finite Element Method, Computational Fluid Dynamics, Convective Heat Transfer
Software: FEMAP, NASTRAN, MathCAD, ANSYS, ANSYS Fluent, ANSYS SpaceClaim, Solidworks, MATLAB, COMSOL, Creo, Windchill, Microsoft Word, PowerPoint, Excel, VBA.