

Michelle Leslie Shepard Garnica

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León, Guanajuato, México. (Willing to Relocate)

EDUCATION

Bachelor Degree Aeronautical Engineering

Instituto Politécnico Nacional

Aug 2019 - Jul 2024

- GPA: 3.2/4.0 (8.1/10)
- SPECIALIZATION: Design and Construction

TECHNICAL EXPERIENCE

- Fluid Analysis (CFD)
- Finite Element Analysis (FEA)
- Modal, Structural, Fatigue, Harmonic and Optimization Analysis
- Power Spectral Density (PSD) Analysis
- Fluid Structure Interaction (FSI) Analysis

TECHNICAL SKILLS

- ENGINEERING TOOLS: SolidWorks | Autocad Inventor | ANSYS Workbench | ANSYS Fluent | SIMULINK
- PROGRAMMING: C | C++ | Matlab | Java | Python (basic)
- OTHER: Microsoft Access | Public Speaking & Debate | Fluent in English | Native in Spanish | French (Intermediate)

EXPERIENCE

Dissertation Project: Characteristics and Structural Analyses in Space Capsules During Atmospheric Re-entry

Instituto Politécnico Nacional | Jul 2024 – Jul 2025

- SKILLS USED: Autocad Inventor, ANSYS Workbench, CFD, FEA (Modal, Static Structural, Harmonic), FSI, PSD
- Researched re-entry conditions and characteristics. Analyzed two different kinds of space capsules when faced to re-entry conditions after a low-orbit flight by using an FSI analysis. And Designed my own space capsule model to compare results between the three capsule models.

Development and Experimentation Composite Material Project (Team Project)

Instituto Politécnico Nacional | Mar 2024 – Jul 2024

- SKILLS USED: Harmonic Analysis
- Developed a plaque consisting of jute fiber, epoxy resin, and a nucleus material to perform a series of tests to help us choose an alternative composite material configuration for a chevron to absorb vibration and reduce noise.

Avionics Course – Centennial College, Toronto, Canada

Government Grant Awardee | Feb 2024 – Mar 2024

- SKILLS USED: Matlab, SIMULINK
- Awarded a government grant to assist on an avionics course at Centennial College in Toronto Canada.
- Completed a series of labs in avionics circuits ensembling and problem-solving.

Recovery System Leader – Phoenix Experimental Rocketry

Phoenix Rocketry Team | Feb 2021 – Jan 2024

- SKILLS USED: SolidWorks, Matlab
- Researched for experimental tasks the team wants to achieve and find different rocket development methods.
- Contributed to the design and construction of a National Winning Experimental Rocket performed by the team Phoenix Rocketry.
- Designed a parachute that could hold an object of less than 10 kg (22 lbs) during a free-fall of 1000 meters (3,281 ft) that slowed our rocket down to around 2 m/s - 5 m/s.
- Calculated Lift, Drag, and other aerodynamic characteristics that the specified shape of our parachute would have.
- Assisted to the rest of the areas in design specifications needed for the rocket, characteristics that this would have once finished.

PROJECTS & ACHIEVEMENTS

- VOLUNTEER: Digital Tools Advisement at FOSYTEC | 2023 - Present
- COMPETITION: ENMICE Tijuana 2021 – 3rd Place, Experimental Rocket with Inertial-Release Recovery System