

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