Thais Isabelle Parron Ruiz

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EDUCATION

University of South Florida - Tampa, FL — GPA: 3.85

Bachelor of Science in Mechanical Engineering — Expected Graduation Date: Dec 2026
Minor: Aerospace Engineering

EXPERIENCE

Engineering Tutor — **AUG 2024 – Present**

University of South Florida — *Tampa, FL*

- Tutor at the Engineering Student Success Center in Statics, Dynamics, Thermodynamics, Electrical Systems I, programming, Computational Methods, and Kinematics & Dynamics of Machinery.
- Assist an average of **2** students per hour across all supported subjects.

Water Harvesting Research — **AUG 2024 - Present**

University of South Florida — *Tampa, FL*

- Designed a sustainable water collection device using laser-modified aluminum with alternating superhydrophilic and superhydrophobic surface patterns to enhance droplet formation and flow.
- Integrated a top-mounted fan for airflow and a central cooling system to accelerate condensation, improving collection efficiency in humid, low-resource environments.

Volunteer — **JAN 2020 – DEC 2021**

Rotary – Interact Club — *Cacoal, RO - BRAZIL*

- Helped with planning and organizing **5** fundraising events where we collected **$10k** in a year.
- Encouraged donations by supporting community fundraising events and campaigns.

ENGINEERING PROJECTS

Dual-Action Can Crusher Design — **JAN 2025 – MAY 2025**

Kinematics & Dynamics of Machinery Final Project

- Designed a dual-action can crusher using a **6-bar** linkage in SolidWorks. Reduced input force by **40%** through horizontal pre-denting before vertical crushing.
- Built a refined functional prototype using aluminum and wood, resolving interference with spacers and recommending steel for improved stiffness.

Projectile Simulation Game — **MAR 2024 – APR 2024**

Programming Concepts

- Developed a projectile-launching game in MATLAB, where players aimed to hit a target at the base of a mountain with a precision of within **2** meters, incorporating physics-based calculations for trajectory and launch dynamics.
- Implemented dynamic visuals in the game, displaying the mountain, target, and projectile trajectory, while allowing players multiple attempts.

SOLIDWORKS Engineering Project — **AUG 2023 – DEC 2023**

Computer Aided Design and Engineering

- Designed an acoustic guitar in SolidWorks, utilizing multiple features to model its components accurately.
- Created functional tuning pins that mimic real-life mechanics, which would allow string tension adjustment.

Action Figure Bot — **JAN 2023 – MAY 2023**

Foundations of Engineering Laboratory

- Designed in a group of **5** students, an object follower robot with 3D printed chassis to introduce **100+** K-12 students to the Engineering and Robotics field.
- Built a prototype that utilized **1** Ultrasonic sensor to follow an object by coding in Arduino.

Sustainable Engineering Project — **JAN 2023 – MAY 2023**

Engineering Economics with Social and Global Impact

- Created, in a group of five students, a Sustainable Engineering project for Hillsborough County.
- The project aimed to protect the Hillsborough River through dams, reservoirs, and aquifer replenishment, focusing on community well-being and wildlife preservation.

SKILLS

Software: SOLIDWORKS, MATLAB, Microsoft Word, Microsoft Excel, Canva.

Languages: English (fluent), Portuguese (native), Spanish (basic).

Certifications: Mechanical Design and Additive Manufacturing from SOLIDWORKS.