

Daniel Plascencia Segura

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Education

William Marsh Rice University

Bachelor of Science in Mechanical Engineering, GPA: 3.67/4.00

Minor in Engineering Design

Houston, TX

August 2021–May 2025

Research Experience

Mechatronics and Haptic Interfaces (MAHI) Lab

Undergraduate Researcher, Advisor: Dr. Shane King, PI: Dr. Marcia O'Malley

Rice University

May 2023–May 2025

- Designed and prototyped a vibrotactile feedback device for transfemoral amputees
- Created CAD models for insoles, junctions, and housings; led fabrication
- Developed a fatigue testing system and reduced electronics housing size by 12%
- Proposed water-resistant and comfort-focused design improvements
- Managed citations and bibliographies with Zotero to support a multi-source literature review
- Authored and performed scripts for haptic cue discernment experiment trials

Projects

Autonomous Sailboat Fleet

Mechanical Subteam Engineer

Rice University

August 2024–May 2025

- Designed and fabricated a fiberglass boat hull optimized for hydrodynamic stability and structural integrity
- Developed waterproofing solutions for the mast-deck interface to ensure long-term environmental resilience
- Conducted load analyses to enhance durability and load-bearing performance

Automated Capsule Vending Machine

Electrical Subteam Member

Rice University

January 2025–May 2025

- Programmed sensor logic in Arduino IDE to coordinate proximity detection, photogate timing, and stepper motor control
- Designed and assembled an integrated circuit system with proximity sensors, photogates, stepper motor, and LED strips.
- Collaborated with the mechanical subteam to synchronize electrical and mechanical systems

Vibrational Glove for Parkinson's Disease

Mechanical Design Engineer

Rice University

January 2024–May 2024

- Developed an open-source wearable glove for Stanford-based vibrational therapy research
- Designed and iterated tactor holder assemblies in SolidWorks with customizable sizing for patient comfort and usability

Rice Electric Vehicle (REV)

Mechanical Team Co-Lead

Rice University

May 2022–December 2023

- Coordinated subteam timelines and fabrication workflows to meet competition deliverables
- Assessed and improved chassis design for weight and strength optimization

Handwriting Assistance Device

Mechanical Design Lead

Rice University

May 2021–December 2021

- Engineered an assistive glove to improve handwriting stability for patients with limited dexterity
- Led concept ideation, prototyping, and mechanical testing to validate assistive performance

Presentations

Plascencia, D., et al. "FleetCode: Autonomous Sailboats for Cargo Delivery." Poster presented at the HUFF OEDK Engineering Design Showcase, Houston, TX. April 2025

Plascencia, D., et al. "Open Source Vibrotactile Glove for Parkinson's Treatment." Poster presented at the HUFF OEDK Engineering Design Showcase, Houston, TX. April 2024

Plascencia, D., et al. "Vibrotactile Haptic Feedback Device for Sensory Substitution of Foot Center of Pressure to Aid Transfemoral Amputee Locomotion." Poster presented at the Rice Summer Undergraduate Research Symposium, Houston, TX. July 2023

Service and Leadership

Western Truck Exchange

Los Angeles, CA

Assistant Service Manager, Service Advisor

June 2025–Present

- Streamlined service operations by designing flowcharts and accountability frameworks that improved task coordination and reduced turnaround time
- Facilitated communication between clients and technicians to ensure accurate diagnostics, transparent service updates, and client satisfaction
- Initiated anonymous feedback systems and process reviews to identify inefficiencies and implement data-informed improvements
- Collaborated with management to develop outreach initiatives that expanded the client base and strengthened departmental organization

Society of Hispanic Professional Engineers (SHPE)

Rice University

Treasurer, Outreach Coordinator, Alumni Chair

August 2022–May 2025

- Managed a \$30K annual budget and secured \$12K from department sponsorships
- Founded SHPE Jr. chapter at an underprivileged high school; led biweekly mentorship and STEM events, coordinated food and snacks
- Revamped alumni tracking for improved engagement and fundraising

Will Rice College Academic Fellow

Rice University

Math, Physics, and Engineering Tutor

August 2023–May 2025

- Hosted weekly tutoring sessions and open office hours for undergraduates on Sundays
- Scheduled 1 hr long one-on-one tutoring sessions with undergraduates that needed extra help

Skills and Certifications

Programming: C++, Python, MATLAB, Arduino IDE, LaTeX

Technical: SolidWorks, Fusion 360, Github, FDM & SLA 3D printing, Laser & Water Jet Cutting, CNC Machining, DFM/DFA, GD&T

Languages: Spanish (native), French (beginner)

Certificates: Engineer-in-Training (EIT) Certification, CITI Program Certification - Responsible Conduct of Research, Biomedical Research (Completed 2023), Certified Solidworks Associate (CSWA)

Honors and Awards

2025: SERGE Program, Selected Participant - Stanford University

2025: Distinction in Research and Creative Work Award - Rice University

2025: President's Honor Roll (Spring 2025) - Rice University

2025: Best Aerospace or Transportation Technology Award - HUFF OEDK Engineering Design Showcase

2021-2025: The Rice Investment, Full Tuition and Fees Scholarship - Rice University

2016-Present: Young Eisner Scholars (YES), Nationally Selective Academic Program