Daniel Plascencia Segura

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Education

William Marsh Rice University **Houston, TX**
Bachelor of Science in Mechanical Engineering, GPA: 3.67/4.00 *August 2021–May 2025*
Minor in Engineering Design

Research Experience

Mechatronics and Haptic Interfaces (MAHI) Lab **Rice University**
Undergraduate Researcher, Advisor: Dr. Shane King, PI: Dr. Marcia O'Malley *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 **Rice University**
Mechanical Subteam Engineer *August 2024–May 2025*

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

Automated Capsule Vending Machine **Rice University**
Electrical Subteam Member *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 **Rice University**
Mechanical Design Engineer *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) **Rice University**
Mechanical Team Co-Lead *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 **Rice University**
Mechanical Design Lead *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
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 underpriviledged 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 (intermediate)

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