

Miguel A. Cedeno, Ph.D.

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Education	Missouri University of Science & Technology, MO USA Post Doc Engineering Management (VR, AR, AI, ML)	2019
	Missouri University of Science & Technology, MO USA Ph.D. Petroleum Engineering	2019
	Missouri University of Science & Technology, MO USA M.Sc. Petroleum Engineering	2017
	Escuela Superior Politécnica de Chimborazo, Ecuador B.Sc. Mechanical Engineering Summa Cum Laude	2014
Experience	NASA NSPIRES NSTGRO24 NASA Johnson Space Center (Remote) <ul style="list-style-type: none">NSTGRO LV-04: Thermal Management Systems: Primary Reviewer The University of Texas at El Paso Rocket Division Director <ul style="list-style-type: none">Led 2 teams of 60 engineers in developing 3 high-power rockets, NAR accredited, TRA accredited.<ul style="list-style-type: none">Project: Initium<ul style="list-style-type: none">Motor: Aerotech M2500T92 in 6 in 60 lb Carbon Fiber Fiber Glass AluminumCO2 ejection system cartridges main and drogue parachutes for recoveryFlight Control Modules Yagu High UHF antenna Ham Radio Telemega3D Printing electrical circuits while on flight – Payload testingApogee: 11,390 ftTake off and recovery: successfully achieved.Project: Daedalus<ul style="list-style-type: none">Motor: Aerotech M2500T102 in 6.2 in 58.8 lb Carbon Fiber Fiber Glass AluminumCO2 ejection system cartridges main and drogue parachutes for recoveryFlight Control Modules Yagu High UHF antenna Ham Radio Telemega3D Printing electrical circuits while on flight – Payload testingApogee: 9,917 ftTake off and recovery: successfully achieved.Project: Outlander (in progress)<ul style="list-style-type: none">Motor: Aerotech O5500X-PS117 in 6.17 - 5 in 80.4 lb Carbon Fiber Fiber Glass AluminumCO2 ejection system cartridges main and drogue parachutes for recoveryFlight Control Modules Yagu High UHF antenna Ham Radio Telemega for high altitudeSensor array using 18650 battery cells – Payload testing	Houston, TX USA 2023 – present El Paso, TX USA 2021 – present

- Apogee: 30,231 ft
- Test flight: March 2024
- Prototype testing: Air-break | Carbon PLA | Test launch: April 2024

The University of Texas at El Paso

El Paso, TX USA
2021 – present

3D Lockheed Martin Lab Administrator

- Developed a cloud-based system to record the usage of each machine to automate maintenance scheduling.
- Developed a ticket system to receive, process, print, and deliver 3D printed items.
- Proven leadership skills in managing and overseeing laboratory operations at Lockheed Martin, ensuring smooth functioning and adherence to safety protocols.
- Led a team of laboratory personnel, providing guidance, training, and support to enhance productivity and efficiency.
- Developed and implemented laboratory procedures and protocols, ensuring compliance with regulatory standards.
- Managed laboratory resources, including equipment, supplies, and budgets over \$400,000, optimizing utilization and cost-effectiveness.
- Implemented quality control measures and performed regular audits to ensure laboratory results' accuracy, reliability, and precision.
- Collaborated with cross-functional teams to support research and development projects, facilitating effective communication, and fostering a collaborative work environment.
- Demonstrated expertise in troubleshooting and resolving technical issues, ensuring minimal downtime, and maximizing productivity.
- Developed and maintained relationships with external stakeholders and vendors.

The University of Texas at El Paso

El Paso, TX USA
2021 – present

Assistant Professor

Aerospace and Mechanical Engineering Department

- Courses: Thermodynamics, Heat Transfer, Fluid Mechanics, Heat Exchanger Design, CFD, Simulation Assisted Engineering, High Power Rocket Design.

The University of Texas at El Paso

El Paso, TX USA
2019 - 2021

Adjunct Professor - Lecturer

Mechanical Engineering Department

- Classes: Introduction to Thermal-Fluid Sciences, Heat Transfer, Fluid Mechanics, Thermodynamics, Thermal System Design (Heat Exchangers Design including CFD), Visual Basic for Mechanical Engineers.
- ABET Accreditation participating member for ME Department (Fall 2019).
- Machine Learning (ML) and Artificial Intelligence (AI) applied to gas and oil U.S National Production and Flying Drones projects as co-advisor under thesis committee for graduate students.

Missouri University of Science & Technology

Rolla, MO USA
2016 - 2019

Oil and Gas Production Engineer I

- Automating calculations with Python.
- Development of Python scripting in PIPESIM.
- Hydraulic simulations with STIMPlan.
- Simulations with WellFlo by Weatherford.
- Well Assurance design with OLGA by Schlumberger.
- Python scripting in Artificial Intelligence and Deep Machine Learning.
- Multiphase flow simulations of Unloading Gas Wells with OLGA

Schlumberger.

- Researched simulations of Hydraulic Fracture with CFD Ansys Fluent.
- Conducted research in Proppant transport study in fractures.
- TA for Artificial Lift, Production Design, and Completions Design courses.

Andes Steel Manufacturing - Industria Acero de los Andes (IAA)

Ecuador 2013 -
2016

Mechanical Engineer I

(Structural & Manufacturing)

- Structural Design using FEA and CFD with ANSYS Fluent and StarCCM+.
- Upstream, Facilities, refineries, mechanical design for oil gas projects.
- Gas/Oil pipeline sizing, Storage tanks, heat exchangers design, hydrate checking and slug Cather design, pumps/compressors mechanical design and simulation.
- Analysis all technical drawings and identified inconsistencies among designs.
- alternative designs for engineering staff and clients.
- Design of Product and system designs focus on oil & gas, structural, hydro-electrical, and mechanical fields.
- Unique system components and product modification ensuring Structural Design using FEA and CFD.
- Professional drafter in developing the structural design of products, using drafting tools and computer-assisted design/drafting equipment and software.
- Assessing the feasibility of design and application.
- Development of customized applications in Python.
- Development Excel VBA with Python Scripting.

Private, Inc.

Ecuador
2009 - 2013

Senior IT Administrator

- Experienced IT professional with hands-on experience in supporting and maintaining IT systems, networks, and infrastructure in mid-sized organizations.
- Proficient in troubleshooting hardware, software, and network issues, utilizing a systematic approach to quickly identify and resolve technical problems, minimizing downtime, and optimizing system performance.
- Skilled in deploying, configuring, and maintaining a wide range of IT technologies, including servers, workstations, operating systems, and productivity tools, ensuring smooth operations and user satisfaction.
- Strong knowledge of IT security principles and best practices, implementing robust security measures to protect systems, networks, and sensitive data from cyber threats and unauthorized access.
- Proven ability to provide end-user support, deliver excellent customer service and resolve technical issues in a timely and professional manner, ensuring minimal disruption to business operations.

Escuela Superior Politécnica de Chimborazo

Riobamba,
Ecuador
2014

Research: Standardization of Penstock Structural Design for Hydroelectric Power Plants

- Design 3D models for penstock, elbows, and wye branches for Hydroelectric Power Plants.
- Develop a methodology to calculate the stress and strength of parts of the hydraulic power plant.
- Manufacturing of 2 GW hydro electrical power plant in Ecuador.

Certificates & Credential Records	Credential in Effective College Instruction – Association of College and University Educators ACUE	Apr 2022
	OLGA Well Dynamics Certificate - NExT Schlumberger, Houston TX, USA	Aug 2018
	Certified SolidWorks Professional CSWP Dassault Systèmes Mechanical Design – Core USA	Jan 2016
	AutoCAD Certified Professional Autodesk Certified Professional – AutoCAD Mechanical Design USA	Feb 2016
	Teaching Skills and Effective Communication Missouri S&T, USA	Sep 2017
Memberships	Society of Petroleum Engineers (SPE) American Society of Mechanical Engineers (ASME) American Association of Drilling Engineers (AADE) Society of Hispanic Professional Engineers (SHPE) Tripoli Rocketry Association (TRA) National Association of Rocketry (NAR)	
Honors	Escuela Superior Politécnica de Chimborazo Mechanical Engineering Department Top 1 Senior Graduate Award Valedictorian Summa Cum Laude	2014
	Spring and Summer INTO University of South Florida Superstar Student Award	2015
	University of Texas at El Paso College of Engineering Distinguished Faculty Ceremony 2022 Instructional Excellence Award	2022
Grants	National Science Foundation (NSF) Supporting Talented, Financially Challenged Mechanical Engineering Students Studying Robotics, Autonomous Systems, Machine Intelligence, and Advanced Manufacturing (RAMIAM) Co-PI \$1.5 million Awarded	
Publications	Al-Alwani, M. A., Britt, L. K., Dunn-Norman, S., Alkinani, H. H., Al-Hameedi, A. T. T., Cedeno, M. A. , Al-Bazzaz, W. H. (2019, October 25). <i>Short and Long-Term Productivity Comparison of Hydraulic Fracturing Fluid Systems in East Texas Cotton Valley Formation</i> . Society of Petroleum Engineers. doi:10.2118/196515-MS Cedeno, M.A. , (2021, June 28-30). <i>Unloading Frac Hits in Gas Wells: How does the Nitrogen Injection Rate and Pressure Affect The Unloading Process?</i> Society of Petroleum Engineers. doi:200962-MS Enriquez, A., Cedeno, M. , Everett L., <i>UAV Parameter Estimation Through Machine Learning</i> . ASEE 2021 Gulf-Southwest Annual Conference, (March 24-26, 2021) Enriquez, A., Cedeno, M. , Everett L., <i>UAV Parameter Estimation Through Machine Learning</i> . Journal of Strategic Innovation and Sustainability (ISSN# 1718-2077), vol 16(3), 2021	