

Julio C. Villarroel, MS, MPM

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Authorized to work in the U.S. (Permanent resident in process); No visa sponsorship required; **Available** for: internships **Fall '25/Spring '26**

Education (6)

1 doctoral degree (in progress) • 2 master's degrees • 2 graduate certificates

The University of Texas at Austin
PhD in Petroleum Engineering
GPA: 3.7 (17 courses), 2025

The University of Texas at Austin
MS in Petroleum Engineering
GPA: 3.8, Graduation: 2023

Universidad de Barcelona (Spain)
Master's in Project Management (MPM), Graduation: 2015

Military School of Engineering
BS in Petroleum Engineering
GPA: 8.7/10 (Valedictorian)

UT Austin, School of Geosciences
Certificate in Machine Learning & Data Analytics (2025)

Private University of Santa Cruz
Certificate in Modeling of Fluid Properties and Reservoirs (2015)

Experience (6)

9 years of industry experience • 12 oil & gas exploration projects • 16 oilfields • 34 reservoirs

PhD Research—Lithium Reservoir Engineering, Advisors: Dr. [Larry W. Lake](#) & [Carlos Torres-Verdín](#) 2023-present

- I conduct research at The University of Texas at Austin on formation evaluation, geochemistry, and fluid flow for **lithium** exploration in **oilfields**, **salt flats** (*salar*s), and **geothermal** basins. Demonstrated the feasibility of assessing presence of Li^+ with geophysical well logs, focusing on the **Smackover** formation, where *Equinor*, *Albemarle*, and *ExxonMobil* operate [LINK1](#) [LINK2](#)

ZELANDEZ—Aquifer Performance Intern [Andean Lithium Salars]

2022 | Salta, Argentina

- I gained experience in lithium E&P operations at *Salar del Hombre Muerto* (northern Argentina). By analyzing data and market opportunities, I presented reservoir-engineering applications for spent-brine re-injection modeling, which opened a new business line for the company. I gained transferable insights between the mining and oil industries. [LINK](#)

STRONGHOLD Investment Management—Reservoir Engineering Intern [Haynesville Shale] 2021 | Dallas, TX

- I conducted research in the oil & gas mineral rights sector. I developed a novel decline-curve model tailored to Haynesville wells, achieving residuals **below 1%** for type-curve modeling and strategic planning in this basin. This work advanced my understanding of shale-gas production in over-pressured conditions (published at SPE ATCE 2023). [LINK](#)

BP (now YPF Bolivianos-Chaco)—Reservoir Engineer [Deep Sub-Andean Basins] 09/2012–09/2020 | Bolivia

- Managed 14 oilfields and contributed to 12 major exploration projects, specializing in gas-condensate, naturally fractured, and geo-pressured reservoirs for development, production optimization, reserves valuation, and forecasting.
- Budgeted and conducted risk analysis for HPHT wells valued at **\$90M–\$120M** each in deep Devonian basins.
- Designed and executed the Carrasco FW-3 workover, discovering **6 BCF** of gas and generating **\$4.5M** in revenue.
- Supervised over **200** field operations, including well testing, slick-line, wireline logging, and coiled tubing.

OXY—Reservoir Jr. Engineer, Co-op [Condensate Mature Fields]

05-09/2011 | Bolivia

- Conducted reserves evaluation for the *Naranjillos* field, comprising **six** gas-condensate reservoirs, **28** wells, and over **30** years of production. Created material balance models and decline curves, found potential upsides for investment.

SLB (Schlumberger)—Wireline Intern

2011 | Bolivia

- Maintained logging tools and assisted in the electronics lab with high-precision tools.

Skills and Proficiencies

- Technical: geochemical modeling, reserves evaluation, well-log interpretation, pressure and rate transient analysis (PTA / RTA), production modeling, pore pressure prediction, decline curve analysis, Machine learning & data analytics
- Teaching Assistant for **4 PGE classes** at UT Austin: Formation Evaluation & Well logs, Reservoir Engineering 1 (Primary Recovery), Thermodynamics & Phase behavior, and Natural Gas Engineering.
- Fluent in **ComboCurve**, **Spotfire**, Whitson RTA, **Enverus**, CMG, PetEx: GAP, MBal, Prosper; Kappa: Citrine, Saphir; PanSystem, PHDwin, PVT-Sim, Techlog, UTAPWeLS, Kingdom Seismic, **PHREEQC**, and **Spanish**

Relevant Extra-curricular Activities

2020-2025: Rugby player (Captain), University of Texas Longhorns Rugby XV Club, compete in the Red-river Collegiate League

2023-2025: Social media manager, SPWLA Texas Student Chapter

2016-2019: Visiting Professor: Reservoir Engineering 1 (7 semesters taught), Military School of Engineering (Bolivia)

2016-2020: SPE Faculty Advisor, Military School of Engineering: achieved 3 SPE outstanding chapter awards

2012-2013: Student Chapter Liaison, SPE Bolivian Section: established the Craft & Hawkins Award for outstanding students

2006-2007: Military Naval Sailor, Bolivia Navy Force: mandatory military service required by the Constitution

Publications (6)

- **Villarroel J.C.**, Crisafulli D.M., Amaro Estrada J.I., Lake L.W., Torres-Verdín C. (2025). *Assessing the Influence of **Lithium** Concentration on Dielectric Permittivity Using Frequency-Dependent Coaxial Probe Measurements of Various Hypersaline Ionic Solutions*. Submitted to Conference IMAGE 2025 by SEG and AAPG, Houston, TX. (submitted)
- **Villarroel J.C.**, Torres-Verdín C., Lake L.W. (2025). “*Detection and Assessment of **Lithium** Concentration in the Smackover Formation Using Triple-Combo Well Logs*”. AAPG ICE 2025 international symposium, Rio de Janeiro, Brazil. (submitted)
- **Villarroel J.C.**, DiCarlo D. (2025), and Lake, L.W. “*From Flow Regimes to Reserves: A General Type Curve for Unconventional Basins using Modern Rate-Time Analysis*”. SPE ATCE 2025, Dallas, TX. (submitted to conference)
- Amaro Estrada J.I., **Villarroel J.C.**, Crisafulli D.M., Torres-Verdín C. (2025). “*Experimental and Molecular Modeling of the Structure and Electrical Conductivity of Bulk Ionic Aqueous Solutions: Sodium, Potassium and **Lithium** Chloride*”. J. of Molecular Liquids (Elsevier). [LINK](#)
- **Villarroel J.C.**, Lake, L.W. and DiCarlo D. (2023). “*Accounting for Exterior Flow Using the Modified Logistic Growth Model for Unconventional Geo-pressured Shale Gas Reservoirs*”. SPE 214872-MS at SPE ATCE 2023 San Antonio, TX. [LINK](#)
- **Villarroel J.C.** “*Exterior Flow for Unconventional Geopressed Shale Gas Reservoirs using the Modified Logistic Growth Model*”. MS Thesis. University of Texas at Austin. Supervised by Professors Larry W. Lake and David DiCarlo. [LINK](#)

Awards

19 academic Awards • \$57K in value

[With full transparency, I include this to show how capable I become to bring value]

Merit-based recognitions in the U.S.A.

	<u>amount</u>
2025: General International Students Office TPEG Scholarship	\$6,500
2024: SPE Henry DeWitt Smith Memorial Fellowship: international award, PhD student in petroleum eng LINK1 LINK2	\$5,000
2024: Osmar, M. and R. Abib Memorial Scholarship in Petroleum Engineering: outstanding academic achievement	\$6,000
2023: Osmar, M. and R. Abib Memorial Scholarship in Petroleum Engineering: outstanding academic achievement	\$3,285
2023: Texas Good Neighbor Scholarship: for outstanding students. Issuer: Texas Gov. Dept. of Education LINK	\$22,700
2023: 1 st Place—SPWLA International Paper Contest 2023, 64 th Annual Symposium, Master’s division LINK	\$1,800
2023: 1 st Place—SPWLA UT Austin Student Local Paper Contest 2023. Master’s division	\$200
2023: 2 nd Place—SPE UT Austin Student Paper Local Contest 2023. Master’s division	\$250
2023: 3 rd Place (out of 45 worldwide projects)—AAPG Sustainable Development International Competition LINK	\$2,000
2023: 3 rd Place—SPE Gulf Coast and Southwestern North America Regional Paper Contest. Master’s division	
2023: Professional Development Award—Cockrell School of Engineering, The University of Texas at Austin	\$250
2022: S.P. Yates Memorial Endowment for Graduate Fellowships in Petroleum Engineering, UT Austin	\$2,000
2021: George J. Heuer, Jr. Ph.D. Endowed Graduate Fellowship Fund in Petroleum Engineering, UT Austin	\$1,500
<u>in Bolivia. -</u>	<u>\$51,485</u>

2017-2019: SPE Presidential Outstanding Chapter Award, 3 times awarded in the role of Faculty Advisor	
2014: Young Professional Talent Award. Issuer: Military School of Engineering at the annual alumni ceremony	
2011: The Bolivian Society of Engineers (SIB)—Certificate of Excellence given to young professionals	
2011: “Scholarship of Honor”—Given to class Valedictorian. Issuer: The Military School of Engineering LINK	\$Bs.-15,000
2008-2010 Academic Excellence Scholarships, given to the top 5% of students (50% off in tuition & waivers)	<u>\$Bs.-22,500</u>
2009: YPFB Silver Diamond Distinction for Excellence Students. Issuer: YPFB (the national oil company)	\$Bs.- 37,500
	<u>\$5,400</u>

Personal References

- Dr. Larry W. Lake, supervisor at The University of Texas at Austin | larry_lake@mail.utexas.edu | 512 4713161
- Dr. Carlos Torres-Verdín, supervisor at The University of Texas at Austin | cverdin@mail.utexas.edu | 512 468 9552
- Van Stewart, Head Coach at UT Austin Longhorns Rugby XV Men’s Club | vanstew4@outlook.com | 713 474 3271
- Dr. David DiCarlo, co-supervisor at UT Austin in Reservoir Engineering | dicarlo@mail.utexas.edu | 512 471 1283
- Manuel Cossio, Reservoir Eng. at ExxonMobil, Supervisor at Stronghold | manuel.cossio@exxonmobil.com | 979 739 6808
- Franco Sivila, supervisor as Reservoir Eng. Head at BP Bolivia | franco.sivila@ypfbchaco.com.bo | +(591) 72882642
- Dr. Matthew Balhoff, Department Head of Petroleum Eng. at UT Austin | balhoff@mail.utexas.edu | 512-471 3246