Daniel Delgado-Uriarte

M.S. student in Petroleum Engineering, Texas A&M University

danieldelgadouriarte@gmail.com · ORCID 0009-0006-0536-5158 · Google Scholar · LinkedIn · danieldelgadouriarte.com

Education

Texas A&M University, Harold Vance Department of Petroleum Engineering — Aug 2026 – expected Aug 2027
M.S. Petroleum Engineering (thesis) — *College Station, TX*

- Coursework (fall 2026): Drilling Engineering, Production Engineering, Subsurface Engineering for Sustainable Energy

Universidad de Deusto — 2022 – 2026
B.S. Industrial Technology Engineering — *Bilbao, Spain*

- Bachelor's thesis on H_2/CH_4 diffusion in polyethylene: 10/10 with Matrícula de Honor (highest distinction); first-author article in ACS Applied Polymer Materials

University of the Basque Country (UPV/EHU), Bilbao School of Engineering — 2018 – 2022
B.S. Industrial Technology Engineering (transferred to Deusto) — *Bilbao, Spain*

- Four years of the degree while competing as a high-performance athlete

Research

Drilling dynamics, with Dr. Roman Shor (Texas A&M University) — Sep 2026 – present

- Benchmark of stick-slip detection from surface torque and rotary speed on public field data from the Volve field (Equinor) and Utah FORGE, using downhole measurements as ground truth
- Compares a detector trained only on simulations of the Aarsnes–Shor torsional model, supervised machine learning and a simple torque-variability index
- Abstract accepted for presentation and publication in the proceedings of the 52nd Stanford Geothermal Workshop (Stanford, CA, 8–10 February 2027)

Molecular simulation: H_2/CH_4 transport in polyethylene (bachelor's thesis) — 2025 – 2026

- Statistically validated molecular dynamics (LAMMPS) of hydrogen and methane diffusion in amorphous polyethylene, comparing temperatures and simulation ensembles: the H_2/CH_4 diffusivity selectivity depends on the ensemble chosen
- Published in ACS Applied Polymer Materials, 8(11), 8017–8031 (2026), with public code

Data projects

Open Well Data (openwelldata.org) — 2026 – present

- Online catalogue of public subsurface data sources with a verification status for each record
- Standardized well-data collections with DOIs on Zenodo, a channel dictionary and a read-only API
- Described in a preprint on EarthArXiv (doi:10.31223/X5NJ8V); licence CC BY-NC 4.0

Open Well Records (openwellrecords.org) — 2026 – present

- Online at openwellrecords.org: public regulatory well records harmonized into common tables so that records from different jurisdictions can be read side by side
- Dataset on Zenodo, concept DOI 10.5281/zenodo.24097206; licence CC BY-NC 4.0

Publications

1. **Delgado-Uriarte, D.**, & López, A. (2026). Ensemble-dependent diffusivity selectivity in amorphous polyethylene: a statistically validated molecular dynamics study of H_2/CH_4 transport. *ACS Applied Polymer Materials*, 8(11), 8017–8031. doi:10.1021/acsapm.6c00287

2. **Delgado-Uriarte, D.** (2026). Open Well Data: a catalogue of public subsurface data sources with a verification status per record, standardized well-data collections and a channel dictionary. *EarthArXiv* (preprint). doi:10.31223/X5NJ8V
3. **Delgado-Uriarte, D.**, & Shor, R. J. (2027). Stick-slip and HFTO at Utah FORGE: what surface drilling data can and cannot detect. 52nd Stanford Geothermal Workshop, Stanford, CA, 8–10 February 2027 (accepted for presentation and proceedings)
4. **Delgado-Uriarte, D.** (2023). *Device for detection of hydrogen leaks in pipe systems and installations*. Spanish utility model ES U202330768, published 7 September 2023

Abstracts submitted

1. **Delgado-Uriarte, D.**, & Shor, R. J. Does machine learning beat decline curves out of time? A pre-registered benchmark on public Bakken well data. URTeC 2027
2. **Delgado-Uriarte, D.**, & Shor, R. J. Does a strength-scaled drilling-rate law transfer from North Sea sediments to Utah FORGE granite? ARMA 2027 Symposium
3. **Delgado-Uriarte, D.** How oil viscosity controls CO_2 partitioning and injectivity in depleted heavy-oil reservoirs. EAGE IOR+ 2027, Lyon
4. **Delgado-Uriarte, D.** Water-property models can swing simulated geothermal energy by a factor of two: correcting the physics before training machine-learning surrogates. Iceland Geothermal Conference 2027

Awards

- Finalist (top 50), MONDRAGON Sariak 2026 bachelor's and master's thesis awards, Fagor Taldea category
- Bachelor's thesis graded 10/10 with Matrícula de Honor (highest distinction), Universidad de Deusto, 2026

Presentations and public comment

- Public comment at the Railroad Commission of Texas hearing on the proposed amendments to 16 TAC §3.15 and §3.58 (SB 1150), Austin, 20 November 2026

Experience

Satlantis Jul – Aug 2025
Bid Manager Intern *Leioa, Spain*

- Supported bid preparation, documentation and client communications
- Built the bid team's tool to classify and search bid documentation and client records in one month (GitLab, Docker)

BHS 2022 – 2026
Hardware and firmware engineer (own project) *Bilbao, Spain*

- Wireless hydrogen leak detector for pipe systems, started after a refinery engineer reported H_2 leaks (Spanish utility model ES U202330768)
- Sensor selection and calibration, low-power firmware, RF link, custom PCBs, enclosure and fleet monitoring; extended to natural gas and to in-pipe pressure and temperature

Gorka Yarritu Surf Eskola Summers 2017 – 2022
Surf instructor *Sopelana, Spain*

- Taught children, including children with special needs, adults and international groups; groups of 5–10

Athletics

High-performance athlete, stand-up paddle (SUP race and SUP surf) 2016 – 2022

- Officially recognized high-performance athlete; competed nationally and internationally while studying engineering
- No. 1 Spanish Cup ranking, open water U16 (2016); Spanish circuit U18 runner-up (2018); Basque champion U16 (2016) and U18 (2018, 2019); Eurotour Bilbao U18 champion (2019)
- Certified surf judge and technical surf director (FESURF/EHSF)

Volunteering

SPE Texas A&M Student Chapter, Energy4me Sep 2026 – present

- Volunteer in Energy4me, the SPE outreach programme that teaches children about energy and petroleum engineering

AADE and IADC Texas A&M Student Chapters Aug 2026 – present

- Member of the drilling student chapters: events and industry talks

Memberships

Society of Petroleum Engineers (SPE); IEEE (Circuits and Systems, Consumer Technology, Electron Devices, Engineering in Medicine and Biology, and Industrial Electronics societies); Spanish Hydrogen Association (AeH2)

Certificates

- Reservoir Geomechanics (Stanford)
- Oil & Gas Industry Operations and Markets (Duke)
- Carbon Capture and Storage (Edinburgh)
- Corrosion Science and Engineering (Manchester)
- Natural Attenuation of Groundwater Contaminants (Rice)
- Politics and Economics of International Energy (Sciences Po)
- Macroeconomic Management in Resource-Rich Countries (IMF)
- Negotiating Extractive Industry Contracts (SDG Academy)
- FEMA Emergency Management Institute: IS-100.c, Introduction to the Incident Command System (13 Nov 2026; 0.20 IACET CEU)

Languages

Spanish (native); English (Cambridge C1 Advanced; TOEFL iBT); French (DALF C1)

Skills

Drilling: drillstring dynamics, torque and drag, hydraulics and ECD, well control basics, ROP and specific energy; WITSML, MWD and daily drilling report data

Reservoir and production: ECLIPSE 300 THERMAL, open-DARTS, OPM Flow, CO_2 EOR, decline curves, nodal analysis, PVT, experimental design (Latin hypercube, Sobol)

Molecular simulation: LAMMPS (GPU), ReaxFF, moltemplate, packmol, OpenFOAM; force fields TraPPE, OPLS-AA, CLAYFF, UFF, SPC/E, EPM2

Software and data: Python (pandas, scikit-learn, PyTorch, JAX, SALib), Rust, MATLAB, SQL, Git, Linux/HPC, Docker; Gaussian processes, simulation-based inference; LAS, DLIS, WITSML, SEG-Y

Hardware: embedded C (nRF, STM32, ESP32, AVR), PCB design (KiCad, EasyEDA), RF, sensor calibration; CAD (Fusion 360, SolidWorks), Ansys