

Matías Podeley

AI for energy and mining · Reservoir engineering & business development · Industrial security
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AI and data tools for energy and mining decisions, built on eighteen years inside the operating companies that take them. Thirteen years in reservoir engineering: simulation, geostatistics and forecasting on assets across Argentina, Peru, Ecuador and Colombia. Then four years reading the whole system, from midstream to petrochemicals, appraising new business through to the investment decision. Ten tools are live at podeley.ar.

Published work

- Basin activity from night lights, 13.5 months ahead of the official registry: 20,178 known well events used as ground truth, with ROC-AUC of 0.85 on drilling and 0.91 on fracturing. actividad.podeley.ar
- Ground deformation by satellite radar, with no field instruments: two neighboring blocks moving in mirror image, 80 mm apart over seven years, across 210 × 210 km of basin. subsistencia.podeley.ar
- Mining title unified across provinces: 21,386 rights from seven jurisdictions, 25.8 million hectares and 2,991 holders on a single map. podeley.ar/mineria/
- The gas transport grid, 76 segments month by month with the load on each, alongside the state of the system today. podeley.ar/gas/
- Public registry of cyber incidents in Argentina's energy sector: fourteen incidents, each row sourced, seven of them known only because the attacker posted its victim. podeley.ar/ciber/
- Flaring intensity by operator, measured from orbit: 113 flares and 2.4 Mt of CO₂ in 2024, attributed by block. emisiones.podeley.ar

Experience

Engineer · podeley.ar (independent), Buenos Aires since 2026

- AI and data projects for energy and mining, from idea to execution: dashboards, models and agents on public and client data.
- Research in language-model interpretability, with a published paper and demo. That is where the judgment comes from about which tasks can be handed to an AI system today, and which cannot yet.

Energy Transition Engineer, corporate development · Pluspetrol 2022–2026

- Four years reading the energy system from outside upstream: transport and midstream, refining and petrochemicals, liquids markets, and where a molecule actually finds a buyer.
- Appraisal of new business through to the decision to invest or not, shelved in time when the economics did not hold: sustainable aviation fuel through conceptual engineering, bioenergy with carbon capture and storage (BECCS), helium and uranium.
- Gas-demand creation: ammonia and urea for export off both coasts, and gas solutions for frac fleets. In new energy the bottleneck is rarely the process: it is who signs the offtake.

Reservoir Engineer, new technologies and global reserves · Pluspetrol 2019–2022

- Global reserves progression and asset appraisals; development of the Ichoa play in Bolivia and the Camisea integrated model, on the operator's side.
- In new technologies: underground gas storage.

- Technical representative in the Camisea consortium (blocks 88 and 56, Peru; operator Pluspetrol, with Hunt Oil, SK, Repsol and Sonatrach): migration and maintenance of the full-field simulation model of the giant gas condensate field, and lead of the integrated asset modelling study across GAP, PROSPER and MBAL.
- Development models for Pendare (Colombia) and mature waterflooded fields for Petroamazonas EP (Ecuador): Shushufindi, in the consortium led by Schlumberger (now SLB), and Libertador-Atacapi, through Pardaliservices, with Canacol Energy and Sertecpet.
- Co-creator of Well Expert, the well-data web application the company ended up running on; geosciences focal point for the rollout.

- El Porvenir area (Neuquén basin): studies, reserves progression, development plan, forecasts, waterflood surveillance and workover design.
- Centenario: surveillance and more than 40 well interventions, with field training on rigs, fracturing and production.
- Corporate engineering: valuation support to business development and the block 1AB integrated study (Marañón basin, Peru). The bid for Petroandina Resources ended in the purchase of its Argentine share for over US\$ 300 million.

Earlier: research analyst for an investment bank's equity team (Irevna, 2007–2008) and an internship at Baker Oil Tools (2007).

Teaching and publications

- Instituto Tecnológico de Buenos Aires, Petroleum Engineering Department, 2016–2021: five years teaching Petroleum Project Appraisal and two as a researcher at the Reservoir Simulation Research Center.
- "Aplicación de técnicas de simulación de reservorios a la simulación de salares", VII Seminario Internacional del Litio, Salta (in Spanish).
- "Transferencia tecnológica y de RRHH del upstream petrolero al upstream del litio", VI Seminario Internacional del Litio, Catamarca (in Spanish).
- "Implementation and Performance of a Heavy Oil Pilot in Atacapi Field, Ecuador", co-author.
- "Production Analysis and Forecasting of Vaca Muerta Shale Wells in Argentina: Case History-Based", contributor.
- Mechanistic interpretability paper, with PDF and interactive demo: mpodeley.github.io/assembled-thought.

Education

- Petroleum engineer, Instituto Tecnológico de Buenos Aires (ITBA), 2008–2009.
- Industrial engineer, ITBA, 2002–2006.
- Energy Innovation and Emerging Technologies Program, Stanford University School of Engineering, 2022.
- Computer science exchange, INSA Lyon, 2006–2007.

Tools and languages

- On the data side: Python and GIS, remote sensing with Sentinel-1 (InSAR) and VIIRS, and language models with agents in production.
- On the reservoir side: Petrel, Eclipse and CMG for simulation and geomodelling; GAP, PROSPER and MBAL for integrated asset modelling.
- Native Spanish · full professional English · working French.