Mehmet Ali Metin

M.Sc. Student, Petroleum and Natural Gas Engineering · METU, Ankara
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M.Sc. student in Petroleum and Natural Gas Engineering at METU, working on underground hydrogen storage. I'm open to reservoir engineering roles in industry from 2027.

EDUCATION

M.Sc. in Petroleum and Natural Gas Engineering

September 2026 – June 2028 (expected)
Middle East Technical University (METU), Ankara, Türkiye

Thesis: *Physics-Informed Neural Network Algorithm for Reactive Transport Modeling of Underground Hydrogen Storage*. I am building a 1D reactive transport model in PHREEQC to study how hydrogen reacts with brine, minerals and cushion gases in storage reservoirs. Thousands of randomized simulations will produce a synthetic dataset, which I will then use together with the governing equations to train a physics-informed neural network for fast screening of storage scenarios.

B.Sc. in Petroleum and Natural Gas Engineering

2019 – 2026
Middle East Technical University (METU) · Ankara, Türkiye

Coursework in Reservoir Engineering, Geology, Chemical Engineering, Fluid Transport, and Numerical Methods.

SKILLS

Software & Programming
Python, PHREEQC, Halliburton Landmark, KAPPA Workstation, Golden Software Surfer, SLB Pipesim, COMSOL Multiphysics

Reservoir engineering
Well testing, reservoir simulation, history matching

Field
BHA components, MWD/LWD tools, drilling fluid testing, well control (IWCF Level 1), production operations

Languages
Turkish (native), English (advanced)

HOBBIES

Coffee brewing
Manual brewers, with the moka pot as my favorite.

Hiking & camping
Amateur level, with as little gear as possible.

Video games
I like challenge-heavy games; solving them is how I unwind.

EXPERIENCE

Directional Drilling and Measurement Intern — July – August 2025

TP-OTC, Shorebase Logistics Center, Filyos, Zonguldak

I spent a month in the directional drilling and measurement department at the shorebase that supports TPAO's drillships in the Sakarya Gas Field. Most of my time was in the workshop and warehouse. I ran tool checks on MWD and LWD tools, helped with inventory checks, and learned how the smart and dumb tools in a BHA fit together. I also spent time in the drilling fluids lab running mud weight, viscosity and fluid loss tests, and went over drilling programs and daily drilling reports with the engineers.

Production Department Intern — July 2024

TPAO, Trakya Region (Lüleburgaz, Kırklareli)

I split four weeks between the process and reservoir teams across the Hamitabat, Osmancık and Vakıflar fields. With the process team I did daily well checks, cross-checked SCADA readings by hand, and joined tubing tests. With the reservoir team I read GR and CCL logs with the engineers during two TPIC perforation jobs, helped with an echometer fluid level survey, and collected water, glycol, gas and oil samples for lab analysis.

RESEARCH & PROJECTS

Underground Hydrogen Storage (UHS) Researcher

November 2025 – Present
Middle East Technical University (METU)

Researcher on the project "Autonomous Discovery of Geochemical Reactions Occurring in Reservoirs During Underground Hydrogen Storage by a Neural Network." I generate synthetic data from the project's PHREEQC models, and I recently started assembling and disassembling the laboratory experiment setup.

Field Development Capstone (PETE 417 & 418)

B.Sc. capstone, METU, team project

Two-semester design project on developing a field. In Design I, I handled location selection. In Design II, I handled reservoir simulation.

CERTIFICATIONS & TRAINING

CS50's Introduction to Programming with Python — In Progress
HarvardX

Introduction to CasingSeat™, StressCheck™, WellPlan™ — March 2026
Halliburton

Reservoir Modelling Workflows — March 2026
Dr. Arman Darvish Sarvestani

Level 1 Programme — May 2025
International Well Control Forum (IWCF)

Advanced Stimulation Practices Seminar — March 2024
Production Solutions