AHMET ALI MERT

Senior Geotechnical & Civil Engineer · PhD, MSc

Family member of EU citizen (eligible for EU residence/work rights) · Ankara, Türkiye

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PROFESSIONAL PROFILE

Senior Geotechnical, Civil & Environmental Engineer with 10+ years delivering large, safety-critical infrastructure across owner-side review, design consultancy and construction management. Technical authority on slope stability, deep excavations, diversion tunnels, spillways, foundations and complex rock/soil interfaces, supported by advanced LE/FE modelling and investigation-led ground models. At Türkiye's State Hydraulic Works (DSİ), leads independent design verification and constructible, cost-aware stabilization for hydraulic assets. MSc from The University of Texas at Austin and a completed PhD on static and dynamic slope stability.

CORE EXPERTISE

Geotechnical	Slope stability (static, rapid-drawdown, seismic) · Deep excavations & retaining systems · Foundations · Ground improvement · Seepage & groundwater
Underground & hydraulic	Tunnels & portals · Dams & spillways · Uplift/underpressure · Flood routing · Energy dissipation · Hydraulic-geotechnical interfaces
Owner's engineering	Independent design review · Technical specifications · GBR-style documentation · Tender & BoQ · QA/QC & HSE · Multidisciplinary coordination
Investigation & modelling	Site investigation · Field/lab interpretation · Ground modelling · Forensic back-analysis · Slide2 · RS2 · PLAXIS 2D · UTEXAS4

KEY QUALIFICATIONS

- **Client-side technical authority:** 5+ years as an internal subject-matter expert at DSİ, defining scopes, overseeing consultants, reviewing assumptions/parameters/safety factors and issuing traceable revision requests.
- **Complex geology & underground works:** Deep cuts, diversion-tunnel portals and slopes in ophiolites/mélanges, radiolarite-limestone alternations and mudstone-fill-colluvium units, including high groundwater and seepage effects.
- **Advanced numerical analysis:** LE/FE slope and underground stability, soil-structure interaction, static/pseudo-static/dynamic response, seismic load cases, parameter calibration and back-analysis of observed performance.
- **Ground-risk management:** Plans and interprets large-scale investigation campaigns and produces integrated baseline-style documentation defining assumptions, uncertainties and ground conditions.

PROFESSIONAL EXPERIENCE

Senior Geotechnical Engineer (Owner's Engineer) - **General Directorate of State Hydraulic Works (DSİ), ICOLD Member** *Aug 2019 - Present*

Dams & Hydroelectric Power Plants Dept. · Ankara, Türkiye

- Act as the Owner's Technical Representative for national-scale hydraulic infrastructure, directing external design vendors from basis of design through to issued-for-construction as lead client reviewer of consultant deliverables, and issuing formal comments for code-compliant, constructible and cost-effective solutions.
- Lead independent LE/FE stability analyses (Slide2, RS2, PLAXIS 2D) for spillway excavations, abutments, tunnel portals and slopes under static, rapid-drawdown and seismic conditions; challenge parameters, groundwater assumptions and factor-of-safety basis.
- Develop and compare stabilization concepts for complex geology and construction-stage instabilities, including anchors, piles, MSE/retaining systems, drainage, reprofiling and ground improvement.
- Define scopes and technical specifications for geotechnical investigations and consultancy; coordinate drilling, sampling and lab/in-situ testing into project-specific ground models and design parameters.
- Lead hydraulic-geotechnical interfaces for uplift/underpressure stability, flood-routing compatibility, energy-dissipation works and portal stability across central and regional directorates; sit on the provisional, interim and final acceptance commissions that payment certificates depend on.

Civil Works & Construction Manager - **Huawei Technologies Co. Ltd.** *May 2014 - Jan 2016*

Istanbul, Türkiye

- Led nationwide civil-works delivery for Türkiye's first 4G LTE programme, coordinating ~15 subcontractor teams across concurrent sites; directed foundations, base-station construction, QA/QC and HSE.
- Rebuilt on-site concrete practice (slump, curing, cover, vibration, Schmidt-hammer testing, C20/25 mix recipes) and resolved a tower-slab/column detail causing settlement; closed the related internal audit findings in under six months via site training across 20+ provinces.
- Prepared BoQ/tender packages, supported contractor selection and contract administration, and maintained AutoCAD revisions and audit-ready as-built records.

Geotechnical Design Engineer - **Emay International Engineering & Consultancy Inc.** *Oct 2012 - Dec 2013*

Istanbul, Türkiye

- Delivered the geotechnical design of more than ten structures — viaducts, overpasses and underpasses on the North Marmara Highway & 3rd Bosphorus Bridge (BOT) project, plus municipal bridge renewal and strengthening works.
- Set the field and laboratory testing programme together with the geological engineers, working from core samples taken and still to be taken; derived soil and rock design parameters and rock-mass characterization (RocLab), and ran bearing-capacity, settlement and slope/global-stability analyses for shallow and deep foundations, high embankments and retaining structures.

Selected Internships - **Anadolu University · Kiptaş Inc. · Istanbul Metropolitan Municipality** *2010 - 2011*
Türkiye

- Geotechnical laboratory testing (Atterberg limits, 1-D consolidation), construction-site supervision (QA/QC), and environmental soil/water analysis.

SELECTED PROJECT HIGHLIGHTS

- **Silvan Dam:** Led the geotechnical design effort for stabilizing major spillway excavations at one of the world's highest CFRDs (175.5 m), in very deep colluvium where a landslide developed during construction; back-analysis, prestressed anchors up to 65 m, bond verified by performance, proof, lift-off and load-cell measurements.
- **Koçali Dam:** Contributed to remediation of a major diversion-tunnel instability through expanded investigations, paleo-landslide back-analysis (InSAR/inclinometers), redesign into stable bedrock, and an alternative Morning Glory shaft spillway concept.
- **Okçular / Oyuklu / Hamzalı Dams:** Provided owner-side technical coordination and design review, improving technical consistency, constructability and contractual compliance across multidisciplinary packages.
- **North Marmara Highway & 3rd Bosphorus Bridge:** Produced geotechnical design inputs and reports for viaducts, bridges, underpasses, foundations, embankments and retaining structures.

EDUCATION

PhD, Civil Engineering (Geotechnical) - Eskişehir Technical University | 2020-2026 · GPA 3.92/4.00
Dissertation: Static and Dynamic Stability Assessment of Slopes Adjacent to Appurtenant Hydraulic Structures and Stabilization Recommendations.

MSc, Geotechnical Engineering - The University of Texas at Austin, USA | 2017-2019 · *Graduate Dean's Prestigious Fellowship*
Thesis: Geotechnical Properties, 1-D Consolidation Behavior and Liquefaction Susceptibility of Glaciolacustrine Clays from the Oso Landslide.

MSc, Soil Mechanics & Geotechnical Engineering - Istanbul Technical University | 2013-2015 · GPA 3.63/4.00 · Coursework completed

BSc, Civil Engineering (Double Major with Environmental Engineering) - Anadolu University | 2007-2012 · MÜDEK / EUR-ACE® · Top-5 in Civil Engineering · Valedictorian (1st) in Environmental Engineering · Erasmus, Brno University of Technology (2010)

SELECTED PUBLICATIONS & RESEARCH

- **Mert, A.A.**, Salman, M. & Çalışkan, F. (2026). Overcoming Geological Challenges in the Construction of a CFSGD Diversion Tunnel. *Accepted, ITA-AITES WTC 2026, Montreal.*
- **Mert, A.A.** & Çalışkan, F. (2024). Stability of Portal Slopes of a Diversion Tunnel after the Feb 6, 2023 Kahramanmaraş Earthquakes. *ITA-AITES WTC 2024, Shenzhen.*
- Demirdöğen, S., Yıldırım, S., Yelen, B., **Mert, A.A.** & Bilyay, D. (2024). Performance of Sürgü, Kartalkaya & Tahtaköprü Dams During the Feb 6, 2023 Earthquakes. *7th EWG Meeting, ICOLD, Athens.*
- Wooten, R.L., Kulesza, S., El Mohtar, C., **Mert, A.A.**, et al. (2020). Geotechnical Effects of Hurricane Harvey. *ISSMGE International Journal of Geoengineering Case Histories, 5(4).*
- Karslıoğlu, A., **Mert, A.A.** & Onur, M.İ. (2021). New Trends in Determination of Soil Properties. *European Journal of Science and Technology, Special Issue 28.*

Research profile: 5+ publications spanning seismic and dynamic stability, tunnel engineering, dam-earthquake performance and soil characterization.

TECHNICAL EXPERTISE & SOFTWARE

Underground structures & slopes: Tunnel/portal design and stability checks; staged excavation and support interaction; static, rapid-drawdown and seismic LE/FE analysis; parameter calibration, forensic back-analysis and stabilization of complex rock/soil masses.

Hydraulic engineering review: Spillway capacity and flood routing (PMF); Ogee crest and energy-dissipation review; cavitation and uplift checks; diversion-tunnel capacity, transient/surge and head-loss assessment; geotechnical-hydraulic interface management.

Documentation & oversight: Technical specifications and GBR-style baseline documentation; safety-factor and drainage evaluation against ICOLD/DSİ and international guidance; tender, BoQ, QA/QC and HSE workflows.

Analysis / modelling: Slide2 · RS2 · PLAXIS 2D · GEO5 · MIDAS GTS NX · GeoStudio SLOPE/W · UTEXAS4 · DEEPSOIL

Engineering / GIS: HEC-HMS · HEC-RAS · AutoCAD · ArcGIS · SAP2000 · Sta4CAD · Netcad GIS · MS Office | **Programming:** MATLAB · C++ · Visual Basic

CERTIFICATIONS, TRAINING & HONORS

QHSE Internal Auditor: ISO 9001 (Quality), ISO 14001 (Environment) and OHSAS 18001 (Occupational Health & Safety). **Engineering software:** SAP2000 (Structural Analysis & Design); Netcad GIS (Infrastructure, Water & Road Project Design).

Specialized training: Waste Management & Treatment - Theory and Practice; Sustainability & Economics - T.I.M.E. European Summer School (TESS); Academic English Program - UT Austin (ESL).

Honors: Graduate Dean's Prestigious Fellowship Supplement - UT Austin · Republic of Türkiye MoNE-DSİ Scholarship (2016-2019) - full government sponsorship for graduate study · Faculty of Engineering Project Fair & Competition 2012 (TÜBİTAK: National Research Council of Türkiye) — 2nd Prize · Honor Graduate - Civil & Environmental Engineering, Anadolu University.

MEMBERSHIPS, VOLUNTEERING & LEADERSHIP

Professional: Turkish Chamber of Civil Engineers (İMO) · Turkish Chamber of Environmental Engineers (ÇMO) · Turkish Foundation for Combating Soil Erosion (TEMA).

Professional representation & volunteering: Representative of the Mühendis TEK-SEN Enerji engineers' union at DSİ · MÜDEK Student Evaluator supporting EUR-ACE® engineering-program accreditation · Mentor, KAUST Gifted Student Program and international orientation advisor at UT Austin.

Academic leadership: Student government president; Nature & Environment Society president. References available upon request.