Xueyang Wang

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PROFESSIONAL SUMMARY

Geological & Geotechnical Engineer and Ph.D. candidate with 5+ years of experience in subsurface site characterization, hydrogeological assessments, and civil infrastructure evaluation. Experienced in near-surface geophysics with exploratory boring logs and field instrumentation to delineate stratigraphy, groundwater pathways, and contaminant migration.

EDUCATION

Ph.D. Candidate, Geotechnical Engineering | Expected: 05/2027
Pennsylvania State University | GPA: 3.88/4.00

M.S. Geotechnical Engineering | 05/2023
Central Research Institute of Building and Construction, China MCC

B.S. Underground Space Engineering | 07/2020
Central South University, China

TECHNICAL SKILLS

- ***Field Investigation & Geospatial Analysis***: Geophysical field investigations (ERT, GPR, UAV-EM); Borehole logging; ArcGIS; Google Earth Engine; Landsat 7/8; Sentinel-2; InSAR; Coastal change analysis; Spatial hazard assessment; Heterogeneous geospatial data integration.
- ***Geotechnical Engineering***: Slope deformation assessment; Prefabricated excavation support systems design; Foundations design; Geotechnical risk assessment.
- ***Software & Modeling***: AutoCAD; Finite Element Analysis (MIDAS GTS; ABAQUS); Python; Bayesian Petrophysical Inversion; Uncertainty Quantification; Physics-informed Neural Networks (PINNs); Multiphase Porous-media and Thermo-Hydraulic-Mechanical modeling.

PROFESSIONAL EXPERIENCE

Graduate Research Assistant | Pennsylvania State University | Aug 2023–Present

- ***Field Investigation & Subsurface Characterization***: Conducted integrated near-surface geophysical investigations across two Arctic field campaigns (Utqiaġvik and Wainwright, AK), deploying UAV-borne EM, drone-based GPR, and ~1 km of ERT to delineate subsurface stratigraphy. Developed automated data processing and 3D inversion workflows for UAV-EM, mapping soil heterogeneity and groundwater pathways.
- ***Geospatial Hazard & Infrastructure Risk Assessment***: Constructed a multi-decadal (30-year) shoreline dynamics dataset across 60+ Arctic coastal communities, harmonizing multi-sensor satellite observations across disparate spatial-temporal resolutions and coordinate reference frames. Integrated satellite remote sensing, ground geophysics, downhole thermal monitoring, and atmospheric/marine reanalyses to model permafrost coastal slope instability and infrastructure exposure under compound environmental forcing.
- ***Conducted NSF I-Corps technical discovery interviews*** *with engineering consultants*, local-government personnel, tribal planners, and industry stakeholders, translating computational modeling concepts for technical and nontechnical audiences and synthesizing operational constraints and risk-management priorities into requirements for infrastructure decision-support tools.

CE 337 Geotechnical Laboratory Instructor | Pennsylvania State University | Aug 2024–May 2025

- ***Supervised undergraduate geotechnical laboratory testing***, including unconfined compression, soil compaction, constant-head hydraulic conductivity, grain-size analysis, Atterberg limits, and aggregate-property testing; additional hands-on experience with triaxial and direct-shear testing.

PROFESSIONAL EXPERIENCE CONTINUED

Engineering Research Intern | China Jingye Engineering Co., Ltd. | Aug 2022–May 2023

Engineering Research Intern | China Jingye Engineering Co., Ltd. (China MCC) | **08/2021 – 05/2023**

- ***Slope Failure Investigation***: Conducted forensic cause-and-origin investigation of an active failure in a 30-m karst cut slope at a major hospital complex, synthesizing exploration boring and instrumentation data to identify deep-seated slip surfaces and quantify up to 40% prestress loss across rock anchors; and co-authoring a peer-reviewed paper in *Industrial Construction*.
- ***Pile Installation & Excavation Impact Assessment***: Led construction-impact and causation analyses in MIDAS GTS for a $100K dispute-sensitive project, performing staged finite-element modeling of a 10.2-m deep excavation and jacked-in displacement piles to evaluate settlement and damage mechanisms on an adjacent 23-story building; authored comprehensive engineering assessment reports and condition assessments.
- ***Anti-Flotation Anchor Innovation***: Patented a fabric-confined tie-down anchor system and staged pressure-grouting methodology, overcoming artesian blowout, borehole collapse, and grout washout under high artesian hydraulic heads (successfully implemented at LEGOLAND Shenzhen Resort).
- ***Geotechnical Design Review***: Supported the Engineering Director's regulatory review of 50+ building and municipal infrastructure projects involving retaining structures, cut slopes, excavation support systems, and foundations, checking technical comments, documentation completeness, and formal submissions.
- ***Prefabricated Excavation Support Systems Assessment***: Authored a technical review of prefabricated excavation-support systems, comparing structural performance, constructability, reusability, and field applications of steel bracing, vertical retaining systems, and recoverable anchors.

SELECTED PUBLICATIONS

Journals:

Wang, X., Xiao, M., Dogan, M., Park, C., Hallissey, M., Nicolsky, D., & Rybakov, S. (2026). Drone-mounted VLF-EM survey for electrical resistivity imaging and its application in complex coastal saline permafrost environments. *Engineering Geology*. https://doi.org/10.1016/j.enggeo.2026.108988

Wu, X., **Wang, X.**, Zhang, X., Ren, X., Cao, W., Zhang X. (2024) Investigations and Treatment on Deformation of a Large Slope in a Karst Region[J]. *Journal of Industrial Construction*, 54(11): 234-241. (in Chinese) DOI: 10.3724/j.gyjzG23022307

Cao, W., Yang, Z., **Wang, X.** (2022) Analysis of Interaction Between Test Piles and Anchor Piles in Static Loading Tests on Super-Long Piles with Large Diameters. *Journal of Industrial Construction*, 52(09): 206-213. (in Chinese) DOI:10.13204/j.gyjzG21082505

Patent:

Wu, X., **Wang, X.**, et al. (2022) A Double-pipe Grouting Bagged Vertical Uplift Ground Anchor in the Confined Aquifer and Its Construction method. Chinese patent. CN114658042A

PROFESSIONAL SERVICES

Instructor, BARC Science Fair, Utqiaġvik, Alaska | Summer 2026
Led hands-on engineering thermal insulation experiment for K-12 students.

Member, Operations Committee, United States Permafrost Association | 2023 – 2025
Support organizing USPA webinars and routine operations.

Member, China Concrete & Cement Products Association | 2020 – 2022
Assisted conference organization focused on geotechnical stabilization and solidification technologies.