Abdel Rahman Awawdeh, Ph.D., EIT

Brentwood, TN
E-mail: abdel.resume96@gmail.com | Portfolio website: https://amawawdeh.github.io

EXPERIENCE

Associate Consultant, WSP USA (Brentwood, TN) January 2025 – Present

- Conduct subsurface investigations, soil analysis, and foundation engineering.
- Analyze geotechnical data and prepare technical reports.
- Support site assessments, slope stability, and settlement evaluations.
- Collaborate with teams on design and construction solutions.

Civil Engineering, Shatec Engineering Consultants, LLC (CA, USA) October 2020 – January 2021

- Conducted seepage analysis using SEEP/W software, delivering detailed reports with findings and actionable recommendations.
- Performed soil settlement analysis, providing comprehensive reports outlining root causes and proposed solutions.
- Developed a technical report on the application of computer software for predicting peak temperature in cast-in-place concrete piling.
- Analyzed a traffic accident at a Los Angeles intersection, producing an engineering-focused report on the intersection's design and its potential impact on safety.

Site Civil Engineering Training, LEEWAN Company (Jordan) June 2018 – August 2018

- Evaluated site engineering plans and ensured field implementation by comparing engineering plans with completed work.
- Supervised field work by daily directing staff for what to do with work.
- Wrote weekly detailed progress reports on what had been done.

EDUCATION

PhD in Civil Engineering January 2021 – December 2024
University of Mississippi, Oxford, MS GPA: 4.00

Related coursework: Design with Geosynthetics, Advanced Foundation Engineering, Remote Sensing, Machine Learning, ANN, Programming with Python.

Master of Engineering, Civil Engineering September 2019 – July 2020
University of the Pacific, Stockton, CA GPA: 3.77

Related coursework: Advanced structural steel design, Building Information Modelling, and Engineering Risk Analysis.

Bachelor of Science, Civil Engineering September 2014 – August 2018
Jordan University of Science and Technology, Jordan. GPA: 3.81 (Ranked in Top 5%)

Related coursework: Soil Mechanics, Foundation Engineering I&II, Bridge Engineering, Construction Management, and Steel Design.

Publications:

1. **Awawdeh, A. R.**, Yasarer, H. I., Ghaffari, Z., & Yarbrough, L. D.. Downscaling GRACE Data for Improved Groundwater Forecasting Using Artificial Neural Networks. Civil Engineering Journal, 2025. https://doi.org/10.28991/CEJ-2025-011-02-01

   Led the conceptualization, methodology, validation, and manuscript writing for the research.

2. Ghaffari Z, **Awawdeh AR**, Easson G, Yarbrough LD. Literature Review: Downscaling GRACE and GRACE-FO Products. MDPI Sensors. Pending submission.

   Conducted a comprehensive review of existing literature on the downscaling of GRACE and GRACE-FO data,

summarizing key methodologies and findings.

3. Heintzman LJ, Ghaffari Z, **Awawdeh AR**, Barrett DE, Yarbrough LD, Easson G, Moore MT, Locke MA, Yasarer HI. Assessing Differences in Groundwater Hydrology Dynamics Between In-Situ Measurements and GRACE-Derived Estimates via Machine Learning: A Test-Case of Consequences for Agroecological Relationships within the Yazoo-Mississippi Delta (USA). MDPI Hydrology. **2024**. https://doi.org/10.3390/hydrology11110186

   Developed and validated machine learning models; contributed to creating visualizations and co-authored the manuscript.

4. Ghaffari Z, Easson G, Yarbrough LD, **Awawdeh AR**, Jahan MN, Ellepola A. Using Downscaled GRACE Mascon Data to Assess Total Water Storage in Mississippi Alluvial Plain Aquifer. Sensors. **2023**; 23(14):6428. https://doi.org/10.3390/s23146428.

   Contributed to the design of the research methodology and performed the data analysis using advanced statistical models.

5. Alshannaq AA, **Awawdeh AR**. Implementation of Machine Learning in Predicting Pin-Bearing Strength of Aged and Non-Aged Pultruded GFRP Composites. Journal of Composites for Construction. **2024**. https://doi.org/10.1061/JCCOF2.CCENG-4483

   Led the application of machine learning techniques and co-authored the manuscript, focusing on the analysis and interpretation of complex data sets.

CLASS PROJECTS

BS Graduation Projects I & II

Objective: Structural design of a multi-story reinforced concrete villa with a swimming pool.

- Designed and developed drawing and structural plans using AutoCAD that included foundations, columns, beams, walls, slabs, and detailing.
- Implemented SAP2000 and MATLAB in seismic load modelling by studying the location specifications and seismic maps for that location needed to generate the seismic loads.
- Utilized the results based on the ACI-318 and UBC codes specifications to include the seismic loads in the design.

Conferences:

- **Presentations at Conferences:**

- "Advancing Groundwater Prediction in the Mississippi Delta: Integrating Downscaled GRACE Data and Artificial Neural Networks" Poster presented at the American Geophysical Union Fall Meeting, San Francisco, CA, December 11-15, 2023.
- "Scaling down GRACE data for smaller regions: utilizing artificial neural networks and climate data for enhanced hydrological predictions in the state of Mississippi" presented at Mississippi Water Resources Conference, Starkville, MS, March 28-30, 2023.
- "Downscaling GRACE Equivalent Water Thickness Data for Mississippi Using Neural Nets" poster presented at Mississippi Water Resources Conference, Starkville, MS, April 13, 2022.

- **Conferences Attended:**

- American Geophysical Union Fall Meeting, New Orleans, LA, December 13-17, 2021.
- Water Security Workshop, University of Alabama, Tuscaloosa, AL, October 24-27, 2022.

Certifications and Exams:

- Passed the Fundamentals of Engineering (FE) Exam, September, 2023.

SKILLS

Programming: Python (Xarray, Pandas), TensorFlow, MATLAB.

Tools: GIS, AutoCAD, REVIT, SAP2000, ETABS, PROKON.

Techniques: Machine Learning, ANN, Statistical Inference, Data Analysis, Remote Sensing.

Languages: English, Arabic

ADDITIONAL WORK EXPERIENCE

Teaching/Research Assistant, University of Mississippi, Oxford, MS — January 2021 – December 2024
Teaching Assistant, University of the Pacific, Stockton, CA — August 2019 – June 2020
Instructor for Engineering Courses, Genius Academy, Jordan — June 2018 – December 2018