Khaled HAMDAOUI

33 years old, Married
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Profile Summary

PhD candidate in civil engineering with a specialization in geotechnics and soil science. Research expertise lies in the application of artificial intelligence methodologies for predicting soil behavior and properties. Possesses practical experience in civil engineering projects, complemented by strong leadership and organizational competencies demonstrated through previous responsibilities as Director of Development in a private educational institution.

Education

- **2023**: *GOMYCODE Training School, Algiers, Algeria*
  Certificate in Data Science

- **2021**: *Faculty of Civil Engineering and Architecture, University of Chlef, Algeria*
  PhD student in civil engineering, geotechnics
  Research topic: Application of artificial intelligence in predicting clay soil properties

- **2018**: *Faculty of Technology, Yahia FARES University, Medea, Algeria*
  Master in civil engineering, specialized in geotechnics

- **2016**: *Faculty of Technology, Yahia FARES University, Medea, Algeria*
  Bachelor in civil engineering

- **2014**: *National Preparatory School for Engineering Studies (ENPEI), Rouiba, Algiers, Algeria*
  University degree of the first scientific cycle (DUPCS)
  Certificate of completion of military service

- **2010**: *High School Omar Idris, Ain Oussera, Djelfa, Algeria*
  Baccalaureate in Mathematics with honors

Professional Experience

- **Head of Development, Private School**
  March 2019 – February 2023
  Managed and led development projects, overseeing improvements in educational programs and administrative processes.

- **Office Automation Trainer**
  March 2019 – February 2023
  Conducted training sessions on office automation tools for students and staff.

- **Private School Manager**
  March 2019 – February 2023
  Oversaw daily operations, staff management, and strategic planning.

- **Middle School Mathematics Teacher**
  September 2017 – December 2023
  Developed lesson plans and taught mathematics to middle school students.

- **Geotechnical Engineering Study Office, Blida**
  April 2018 – May 2018
  Designed and calculated reinforced slopes (soil nailing)
  Trained on GEO5 software

- **Geotechnical and Civil Engineering Laboratory, Ain Oussera**
  December 2015 – January 2016
  Conducted compression resistance testing

Data Science Projects

- **Algerian-American Foundation (AAF) Summer University 2023**
  Participated in workshops and seminars focused on advancements in civil engineering and data science.

- **International Seminar ISCMCE, Skikda, Algeria (2021)**
  Presented research on the use of artificial neural networks (ANN) to predict the swelling potential of clay soils

- **Final Year Project (May 2018)**
  Investigated and treated a landslide using data-driven techniques.

Publications

- Hamdaoui, K., et al. (2025). *Interpretable machine learning for predicting compression index of clays using SHAP and gradient boosting models.* **Journal of Engineering and Applied Science**, 72:148. https://doi.org/10.1186/s44147-025-00727-4

Skills

- **Languages**:
  - Arabic: Native language
  - French: Proficient (read, spoken, written)
  - English: Proficient (read, written)
  - Spanish: Beginner

- **Data Science Skills**:
  - Data Cleaning and Pre-processing: Pandas, NumPy, handling missing data, data transformation, and feature engineering.
  - Exploratory Data Analysis (EDA): Matplotlib, Seaborn, descriptive statistics, data visualization.
  - Data Visualization Software: Power BI, Tableau, Google Data Studio.
  - Statistical Analysis: SciPy, hypothesis testing, regression analysis.
  - Machine Learning: Scikit-learn, TensorFlow, supervised and unsupervised learning.
  - Optimization Techniques: Optuna, metaheuristics, particle swarm optimization (PSO), gradient descent, hyperparameter tuning.

- **Geotechnics**: PLAXIS, TALREN, QGIS, GEO5

- **Programming**: Python, C++, MATLAB

- **Others**: CCTV, Excel

- **Soft Skills**:
  - Leadership
  - Project Management
  - Communication
  - Problem Solving
  - Teamwork