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Pouya Zarbipour-Lakposhteh

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Research Interest

Reliability Analysis, Coastal Engineering, Risk and Resilience, Machine Learning, Hydrodynamic

Education

Tarbiat Modares University (TMU), Tehran, Iran — Sep. 2021 – Feb. 2024
MSc in Civil Engineering (coastal, port, and marine structures) | *GPA: 15.03 (out of 20)*

- Thesis Title: Probabilistic Evaluation of Effluent Discharge Performance in Desalination. | Link
- Supervisor : Prof. Hassan Akbari
- Member of the Faculty futsal team

The National University of Skills (NUS), Tehran, Iran — Sep. 2015 – Feb. 2020
ASc and BSc in Civil Engineering | *GPA: 14.94 (out of 20)*

- Member of the Faculty futsal team

Achievements/Awards

Ranked 2nd graduates in marine structures department, Iran — 2023
Awarded for MSc | Ranked 102nd in the world for civil engineering according to US News.

Governmental Fellowship, Iran — Fall 2021
Awarded for MSc | Tarbiat Modares University – Ranked 7th in Iran according to US News.

Volunteer, Iran — Feb. 2020 – Jun. 2020
Awarded for COVID-19 | Iranian Red Crescent

Governmental Fellowship, Iran — Fall 2015
Awarded for ASc and BSc | The National University of Skills

Teaching, Research And Professional Experiences

Supervisor and Executive Engineer, Iran — May. 2024 – Present
Iran Construction Engineering Organization (IRCEO)

- Supervision of the construction of building structures based on Iran's national building regulations

Graduate Research Assistant, (Prof. Shafieefar & Prof. Akbari) — Sep. 2022 – Present
Tarbiat Modares University & Coastal Hyd Lab

- Introducing a new RBDO approach for designing optimal berm breakwaters with required performance
- Investigating resilience in coastal structures, especially berm breakwaters
- Applying machine learning to coastal structures, particularly to forecast berm breakwater recession
- Investigation and analysis of time-dependent reliability in coastal structures, especially breakwaters

Technical Expert of Lab, Civil Computing Laboratory — Apr. 2023 – Feb. 2024
Tarbiat Modares University

Graduate Teaching Assistant, (Prof. Shafieefar & Prof. Akbari) — Feb. 2023 – Present
Tarbiat Modares University & Coastal Hyd Lab

- Teaching assistant for *Numerical Methods in Marine Engineering* and *Mike zero* software training
- Teaching assistant for *Design of Conventional Marine Structures* and *Geo Studio* and *PLAXIS 3D* software training

Publications

[J] Reliability design of seawater desalination outfalls based on a novel probabilistic environmental assessment.
Published in Ocean Engineering (Q1 and IF: 4.6) | First Author | DOI

[J] Reliability-Based Design Optimization of Berm Breakwaters with Different Reshaping and Dependency Structures.
Under Review in Coastal Engineering (Q1 and IF:4.2) | First Author | DOI

[J] New Bayesian formula for reliability design of berm breakwaters.
Under Review in Coastal Engineering (Q1 and IF:4.2) | First Author | DOI

[J] Probabilistic Design of Berm Breakwaters Considering Environmental Parameter Correlations.

Under Review in Ocean Engineering (Q1 and IF:4.6) | DOI

[J] Predicting Berm Breakwaters Recession Using Machine Learning.
In Progress | First Author

[C] Assessment of the Spread of Desalination Plant Effluent Study Area: Saqi Koothar Desalination Plant, Bandar Abbas.
Presented at 1st International Conference on Blue Economy | First Author | Link

Project

Programming Simple Software for Coastal Engineering Dec. 2021 – present
Tarbiat Modares University
- Programing using MATLAB and Python | Programming & Software section of my personal website.
- Software such as Newmark Method in Marine Structures, Earthquake Acceleration Response Spectrum, Sediment Transport Calculator, Groin Simulation, Beach Simulation, etc.
- Web-based software programming and development The *XGBoost Berm Breakwater Recession Prediction tools*.

The Persian Gulf Coastline Monitoring Dec. 2022 – Feb. 2023
GIS and Remote Sensing course, Tarbiat Modares University
- Implemented using ArcGIS Pro, Google Earth Engine and ENVI software
- Analyzed the Persian Gulf coasts quantitatively and qualitatively and examined the effects of rising and falling water and temperature

Geomorphic and Hydrologic analysis for Bushehr in Iran Dec. 2022 – Jan. 2023
GIS and Remote Sensing course, Tarbiat Modares University
- Analyzed the drainage density map, flow distance, Gravelius and Miller's coefficient, bifurcation coefficient index, slope, direction of slope, accumulation of flow, catchment, and river rank in the basin.

Monitoring and ML forecast the Chlorophyll of the Persian Gulf in a 30-year period Nov. 2022
GIS and Remote Sensing course, Tarbiat Modares University
- Implemented using ArcGIS Pro, Google Earth Engine, Machine Learning
- Chronological history and spatial analysis of the Persian Gulf in a 30-year period

Design of the Kish Island Breakwater in the Persian Gulf Jun. 2022 – Jul. 2022
Design of Conventional Marine Structures course, Tarbiat Modares University
- Implemented using PLAXIS 3D, Geo Studio, Microsoft Office, and CEM manual
- Design of three types of rubble mound, berm and caisson breakwaters

Design of the Kish Island Pier in the Persian Gulf Jun. 2022 – Jul. 2022
Design of Conventional Marine Structures course, Tarbiat Modares University
- Implemented using PLAXIS 3D, SAP2000, Geo Studio, and Microsoft Office
- Design of two types of the block pier, pile, and deck

Hydrodynamic model for the Persian Gulf Jun. 2022 – Jul. 2022
Numerical Methods in Marine Engineering course, Tarbiat Modares University
- Implemented using Mike Zero (SW and HD)
- Investigating the changes in Surface elevation, pressure, current speed, etc. in the Persian Gulf

Skills

Personal Strengths: Excellent communication and interpersonal skills, leadership and teamwork abilities, organizational skills, and time and project management.

Programming: MATLAB, Python.

Software: UQLab, Sacs, Mike Zero, PLAXIS 3D, SAP2000, Mixzone Cormix, ArcGIS Pro, Google Earth Engine, Plumes.

Notable Courses

GiS and Remote Sensing, First Grade (18.6/20)

Numerical Methods in Marine Engineering, First Grade (16.5/20)

Marine Geotechnics, Second Grade (18.3/20)

Design of Conventional Marine Structures, Second Grade (15/20)

Offshore Platform, Second Grade (14.5/20)

Test Scores

TOFEL In Progress
Reading, Listening, Writing, Speaking

References

Dr. Hassan Akbari
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Prof. Seyed Ali Akbar Salehi Neyshabouri
Professor, Faculty of Civil Engineering
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