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# ALIREZA HOSSEINI MEHRAB

## PROFESSIONAL SUMMARY

A keen civil engineer and a consummate professional with encyclopedic knowledge and extensive experience in concrete technology, engineered cementitious materials, structural standards, and concrete testing methods. Familiar with advanced software like AutoCAD, MATLAB, ANSYS APDL, and Design Expert. Proven expertise with a proven track record in concrete design and laboratory. Strong collaborator and proactive problem-solver driving quality and efficiency in development and application of novel sorts of concrete.

## PROFESSIONAL SKILLS

- Concrete technology and Design
- Construction materials
- Research and Experiment
- Concrete tests and Standards
- Environmental engineering
- Structural analysis and Optimization
- Risk assessment and Ergonomics
- Laboratory equipment and Maintenance
- Familiar with AutoCAD
- Familiar with ABAQUS and ANSYS APDL
- Familiar with MATLAB and Design Expert
- Microsoft Office

## PROFESSIONAL EXPERIENCE

July 2023- August 2024

**Ferdowsi University of Mashhad- Graduate Research Assistant**, Mashhad, Iran.

- Planned, modified and executed research techniques, procedures and high performance concrete (HPC) mix designs.
- Accumulated profound knowledge in the domain of ASTM, European, and other types of essential standards for testing concrete specimens.
- Supervised the progress of the research project on-site from the production to the experimental tests of high performance concrete (HPC).
- Designed different concrete mix proportions and inspect their mechanical properties and fracture behavior according to the rules outlined in the standards.

September 2020- June 2023

**Ferdowsi University of Mashhad- Research Assistant**, Mashhad, Iran.

- Development and design of various types of cementitious materials, including a special form of engineered cementitious composite (ECC).
- Acquiring valuable practical experiences carrying out various sorts of concrete tests based on the guidelines stated in ASTM and BS EN standards.
- Maintained accurate records of the research progress and provided regular updates of the research progress.

July 2017- September 2017

**Civil Engineering Firm- On-Site Civil Engineer**, Mashhad, Iran

- Supported staff members in their daily tasks, reducing workload burden, and allowing for increased focus on higher-priority assignments.
- Gained valuable experience working within a specific industry, applying learned concepts directly into relevant work situations.
- Supervised construction progress on-site, addressing any discrepancies or issues promptly while maintaining safety protocols.

## EDUCATION

Master of Science, Structural Civil Engineering

**Ferdowsi University of Mashhad**, Mashhad, Iran.

September 2020

GPA: 3.72

Awards: Top ranked student.

### Dissertation:

Mechanical and fracture properties of fiber reinforced pre-wetted lightweight aggregate concrete.

Bachelor of Science, Civil Engineering

**Asrar Higher Education Institute**, Mashhad, Iran.

September 2017

GPA: 3.9

Awards: Top ranked student.

## CERTIFICATIONS

ANSYS-APDL

Technical and Vocational Training Organization, Mashhad, Iran.

January 2024

ABAQUS

Technical and Vocational Training Organization, Mashhad, Iran.

September 2023

## CERTIFICATIONS

HSE-MS  
Technical and Vocational  
Training Organization, Mashhad,  
Iran.  
February 2021

HSE-Officer  
Technical and Vocational  
Training Organization, Mashhad,  
Iran.  
January 2021

## LANGUAGES

English (Advanced)

Persian (Native language)

## REFERENCES:

**M. Reza Esfahani** (full professor)

Department of Civil Engineering,  
Ferdowsi University of Mashhad,  
Mashhad, Iran.

Email: esfahani@um.ac.ir

**Mansour Ghalehnovi** (full  
professor)

Department of Civil Engineering,  
Ferdowsi University of Mashhad,  
Mashhad, Iran.

Email: ghalehnovi@um.ac.ir

## INTERESTS

Soccer

A huge fan of soccer

Video games

A strategic game fanatic

Travelling

Interested in traveling like an  
intrepid explorer

July 2012- July 2016

**Self-Employed Civil Engineer (Part-Time)**, Mashhad, Iran

- Collaborated with a team to ensure projects were completed efficiently and safely.
- Gained valuable experience rehabilitating derelict buildings in suburban areas of Mashhad.
- Applied knowledge of construction materials to improve structural integrity and renovate buildings.

## SOFT SKILLS

- Interpersonal skills
- Leadership ability
- Teamwork
- Productivity and Lateral thinking
- Problem-solving
- Adaptability
- Conflict resolution
- Time management
- Passion for learning
- Decision-making skills

## PUBLICATIONS

**European Journal of Environmental and Civil Engineering** (April 2024)

Development and optimisation of green lightweight engineered cementitious composite containing industrial wastes using response surface methodology

**Materials Testing** (January 2023)

Fracture characteristics of various concrete composites containing polypropylene fibers through five fracture mechanics methods

**Periodica Polytechnica Civil Engineering** (January 2023)

Size Effect on Flexural and Fracture Properties of Polypropylene Fiber-reinforced Engineered Cementitious Composite

**Periodica Polytechnica Civil Engineering** (September 2022)

Experimental Study on Size Effect and Fracture Properties of Polypropylene Fiber Reinforced Lightweight Aggregate Concrete

**Engineering Fracture Mechanics** (Newly submitted)

Synergistic Impacts of Three Various Supplementary Cementitious Materials on Fracture Behavior of High-Performance Hybrid Fiber-Reinforced Concrete

**Case Studies in Construction Materials** (Newly submitted)

Modeling and Optimizing Mechanical and Environmental Performance of High-Performance Hybrid Fiber-Reinforced Concrete Incorporating Ground Granulated Blast Furnace Slag and Quarry Stone Powder Employing Response Surface Methodology

## PROJECTS

July 2023- August 2024

**Development of an eco-friendly high-performance hybrid fiber-reinforced concrete, Ferdowsi University of Mashhad, Mashhad, Iran**

This research project was conducted in order to develop a special sort of high-performance hybrid fiber-reinforced concrete. This project was made up of 4 members, including Professor Ghale Novi (supervisor), Alireza Hosseini Mehrab (head of team), Seyed Mahdi Amirfakhrian (member), and Ehsanollah Yaghubi (member). The project was met with salient results as follows:

- Significant mechanical properties and durability.
- Considerable energy absorption, ductility, and toughness.
- Development of an eco-friendly construction material.