Mohammad Mehrabi Habib Abadi

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EDUCATION & TRAINING

Master of Business Administration **(MBA)**

Kharazmi University [Sep 2019 – Feb 2022]

City: Tehran | **Country:** Iran | **Field(s) of study:** Marketing | **Final grade:** 3.56/4.0

Focused on quantitative analysis through two major industry projects for SAIRAN Medical Equipment Co., which were completed in place of a traditional thesis.

- **Project 1:** Developed a comprehensive performance model by using **Structural Equation Modeling (SEM)** with **SPSS** and **LISREL** to analyze survey data and identify key drivers of market competitiveness.
- **Project 2:** Conducted a quantitative analysis of how different marketing strategies impact corporate performance, using **SEM** to model the relationship between strategy and outcomes like profitability and customer satisfaction.

Bachelor of Science (B.S.)

Shahrekord University [Sep 2013 – Feb 2018]

City: Shahrekord | **Country:** Iran | **Field(s) of study:** Civil engineering | **Final grade:** 3.48/4.0

- Developed a strong foundation in computational modeling, structural analysis, and mathematical principles.
- Co-authored two peer-reviewed conference papers, demonstrating early experience in academic research and writing.
- Key Coursework: GIS (Grade: 17.37/20)

KEY ANALYTICAL & RESEARCH SKILLS

- **Simulation & Math:** Polynomial Chaos Expansion (PCE), Neural Networks, COMSOL Multiphysics.
- **Data Analysis:** Structural Equation Modeling (SEM), SPSS, LISREL.
- **Programming:** Python, MATLAB, JavaScript, HTML/CSS.

- **AI & Libraries:** L2CS-Net, DeepFace, TensorFlow (Basic).
- **Engineering Software:** GIS (ArcGIS), AutoCAD, CsiBridge, CsiSafe, CsiEtabs.
- **Job-related Skills:** Analytical Thinking, Conceptual Model Building, Project Management.
- **Graphic Software:** Adobe Photoshop, Adobe Premiere Pro, DaVinci Resolve.

PUBLICATIONS & ACADEMIC EXPERIENCE

Teaching Assistant

Shahrekord University – Shahrekord, Iran
City: Shahrekord | **Country:** Iran
[Spring 2017]

Main activities and responsibilities:

- Assisted the lead professor for the "Soil Mechanics" course.

Supported undergraduate students with course material and practical exercises.

Journal Article (In Preparation)

- **A Comprehensive Comparative Analysis of PCE, GPR, and Neural Network Surrogate Models for Hydraulic Head Prediction in Heterogeneous Aquifers.** This research aims to identify the most effective surrogate modeling technique, among Polynomial Chaos Expansion (PCE), Gaussian Process Regression (GPR), and Artificial Neural Networks (NN), for predicting hydraulic head in heterogeneous unconfined aquifers. The physical model consists of a domain with a constant sloping bedrock, where hydraulic conductivity (K) varies between the main matrix and internal inhomogeneities. To construct a robust training dataset, a novel two-stage approach was employed. First, the spatial topology of inhomogeneities was optimized using a Genetic Algorithm (GA) to identify critical geometric configurations (with varying numbers of inclusions but constant total area) that yield minimum and maximum hydraulic heads. Based on these optimized geometries, a comprehensive dataset of 1500 samples were generated via COMSOL Multiphysics parametric sweeps, utilizing Sobol sequences to sample hydraulic conductivities within realistic ranges. The surrogate models were subsequently developed and trained in MATLAB using this high-fidelity data. The study is currently in the final phase of data analysis and performance comparison to determine the most accurate and robust surrogate method, laying the groundwork for the final manuscript preparation.

  Authors: Mehrabi Habib Abadi, M., & Raeisi Isa-Abadi, A.

Conference Proceedings

- [2018]
  Dynamic analysis of bridge with and without considering the effect of pile. This study evaluates the dynamic response of a bridge deck under seismic excitations, comparing the results of computational models that include foundation piles versus those that do not. A bridge was modeled in CsiBridge software in two configurations: one with piles and one without. A linear dynamic analysis was performed under identical loading conditions. The shear, moment, and displacement at various points on the bridge deck were extracted and compared. The results demonstrate that the inclusion of piles significantly influences the dynamic response of the bridge deck, altering force distribution and displacement patterns. This highlights that accurate modeling of the soil-structure interaction through piles is essential for a reliable seismic performance assessment of bridge structures.

Authors: Kamgar, R., & Mehrabi Habib Abadi, M. | **Journal Name**: 4th International Conference on Civil Engineering, Architecture and Urban Planning, Shiraz, Iran

- [2018]

  Response analysis of bridge by considering the effect of pile. This paper investigates the dynamic behavior of bridges under moving dead loads and seismic loads, specifically comparing the structural response with and without the inclusion of foundation piles. A three span bridge with I-shaped girders was modeled using CsiBridge software. Two models were analyzed: one with piles and one without. The models were subjected to identical loading conditions, and the base shear, base moment, axial force, and torsional force of the bridge deck were compared. The results indicate that the presence of piles significantly affects the bridge deck's response, reducing axial and shear forces under dead loads while altering force distribution under seismic loading, demonstrating the critical importance of accurate foundation modeling in structural analysis.

  Authors: Kamgar, R., & Mehrabi Habib Abadi, M. | **Journal Name**: National Conference on Applied Researches in Structural Engineering and Construction Management.

KEY QUANTITATIVE RESEARCH PROJECTS

(Conducted for SAIRAN Medical Equipment Co.)

Project 1: **Comprehensive Model of Management, Performance, and Competitiveness**

[2021 – 2022]

- Developed a strategic model for managing performance and enhancing competitiveness for medical equipment products.
- Employed a mixed-methods approach, combining qualitative expert interviews with quantitative analysis of employee survey data.
- Utilized **SPSS** and **LISREL** for **Structural Equation Modeling (SEM)** to establish significant positive relationships between competitive intensity, brand differentiation, marketing innovation, and overall brand performance.

Project 2: **Impact Analysis of Marketing Strategies and Administrative Systems**

[2021 – 2022]

- Evaluated the impact of diverse marketing strategies (aggressive, mass, niche, value-based) on corporate performance.
- Conducted as a descriptive survey, collecting data via employee questionnaires and utilizing **SPSS** for statistical analysis.
- Employed **Structural Equation Modeling (SEM)** to test hypotheses regarding the direct effects of marketing strategies and the moderating effects of administrative systems on key performance indicators.

INDEPENDENT RESEARCH & DEVELOPMENT

- **Urban-Affect Platform (Prototype for Urban Forestry Research)**
  - **Objective:** Designed a virtual experiment to measure "unconscious" human reactions to different urban green spaces (XS to XL scales).
  - **Tech Stack: Python** (FastAPI for backend), **OpenCV** (computer vision), **JavaScript** (frontend).
  - **Key Features:** Integrated **L2CS-Net** for real-time Gaze Tracking and **DeepFace** for Emotion Recognition. The system tracks user eye movement and facial micro-expressions via webcam to

predict preference for nature versus concrete infrastructure.

- **Poultry farm's Inventory & Logistics System (Business Solution)**
  - **Objective:** Developed a custom software to replace manual Excel sheets and digitized the supply chain of a 400k-capacity poultry farm.
  - **Tech Stack: JavaScript** , **HTML/CSS**, **SQLite**.
  - **Key Features:** Created a dynamic dashboard for real-time inventory tracking. Implemented algorithms to calculate feed conversion ratios (FCR) automatically and alert managers for re-ordering raw materials. This tool reduced data entry errors and improved decision-making speed.
- **Academic Task & Portfolio Manager (Personal Tool)**
  - **Objective:** Built a personal productivity tool to manage complex PhD and MSc application processes.
  - **Tech Stack: Node.js**, **Google Calendar API**, **Vanilla JavaScript**.
  - **Key Features:** Implemented the **FSRS (Free Spaced Repetition Scheduler)** algorithm for a "Leitner Box" module to learn vocabulary. Includes a drag-and-drop CV builder and an automated sync with Google Calendar for tracking application deadlines.

PROFESSIONAL EXPERIENCE

Operations & Business Manager

Sepahan Egg Co. – Isfahan, Iran

City: Isfahan | **Country:** Iran

[2016 – Current]

Main activities and responsibilities:

- Apply analytical skills to solve critical business challenges, including **designing and developing a custom inventory management software** (HTML, CSS, JavaScript) to improve supply chain efficiency.
- Co-manage operations and strategic planning for a large-scale agricultural business.
- Responsible for resource allocation and long-term strategic decision-making in a competitive market.

Type of business or sector: Agriculture, Poultry Production

LANGUAGES SKILLS

Mother tongue(s): Persian

Other language(s):

English

IELTS Overall Score: 7.0