Curriculum Vitae: Seyed Hossein Mahdavi, PhD

Personal Details

Full name	Seyed Hossein Mahdavi
Place of birth	Kerman, Iran
E-mails	s.h.mahdavi@outlook.com; sh.mahdavi@sharif.edu; sh.mahdavi@bam.ac.ir;
Website	https://www.bam.ac.ir/resume/%D8%B3%DB%8C%D8%AF-%D8%AD%D8%B3%DB%8C%D9%86-%D9%85%D9%87%D8%AF%D9%88%DB%8C/

Research Interests

Applied mathematical modeling and computations in structural mechanics.
Engineering optimization; Structural dynamics and health monitoring.
Wavelet and curvelet applications in structural mechanics; Signal/image processing.
Non-linear analysis; System identification; Machine/Deep learning paradigms.

Educations

2008-2011	IAUK, Kerman University, Iran **M.Sc.** in Structural Engineering Thesis: "*Linear and non-linear dynamic analysis of 2D frames using Chebyshev wavelets*" **Supervisors:** Prof. Dr. Saeed Shojaee & Prof. Dr. Eysa Salajegheh
2012-2016	University of Malaya (UM), Kuala Lumpur, Malaysia **PhD** in Structural Engineering Thesis: "*Structural health monitoring using adaptive wavelet functions*" **Supervisor:** Prof. Dr. Hashim Abdul Razak Ext. Examiner 1 from: Dep. of Civil Engineering, QUT (Australia). Ext. Examiner 2 from: Dep. of Civil Engineering, UNM (USA). Int. Examiner from: Dep. of Mathematics, UM (Malaysia). University of Malaya (UM); **ranked 59 in QS ranking** 2020.

Working experience:

Sep 2012-Sep2013 **UM**	**Research Assistant** Employer: Dep. of Civil Engineering, University of Malaya(**UM**), Malaysia
Sep 2013-Jan2016 **UM**	**Associate Researcher;** - Algorithm development for structural health monitoring strategies - Supervision of bachelor and master students - Teaching assistant for computer programing in civil engineering University of Malaya (**UM**)

Feb. 2017-Mar.2017

NWPU

Visiting Research Associate
- Algorithm development for identification of non-linear composites

Northwestern Polytechnical University (**NWPU**), Xi'an, China

Mar.2017- Feb. 2019

NWPU

Post-Doctoral Research Fellow
- Algorithm development for identification of non-linear structures
- Supervision of master and collaborating with PhD candidates
- Teaching

Northwestern Polytechnical University (**NWPU**), Xi'an, China

Aug. 2017-Jan. 2019

NWPU

Principle investigator:
- An international collaboration on structural health monitoring research projects under NSFC Grant No.: 51750110509.

Northwestern Polytechnical University (**NWPU**), Xi'an, China

Sep. 2018-Sep. 2019

SUT

Post-Doctoral Research Fellow
- Algorithm development for structural health monitoring and seismic assessment of non-linear hysteresis structures.
- Supervision of master and collaborating with PhD candidates

Sharif University of Technology (**SUT**), Tehran, Iran

Sep. 2018-Jan2019

SUT

Lecturer

3 credits course for postgraduate candidates:
"Structural Health Monitoring"
Dep. of Civil Eng., Sharif University of Technology (**SUT**), Tehran, Iran

June. 2018-Present

پایش هوشمند سازه هونام
Hounam Smart Structural Health Monitoring Co. Ltd.

R&D Scientist
- Leading the SHM team.
- Product development for SHM applications.

Hoonam Structural Health Monitoring Group;
Sharif Advanced Technologies Incubator, Sharif University of Technology, Tehran, Iran.

Oct. 2019-Present

مجتمع آموزش عالی بم

Assistant Professor (Tenure Track)
Head of Department of Civil Engineering
Higher Education Complex of Bam, Iran

Grants, awards, scholarships:

2011	Young Researchers Club; IAUK **ISI paper publication award**
2012-2013	Department of Civil Eng., University of Malaya (UM) **High Impact Research Grant** (HIR: UM.C/HIR/MOHE/ENG/55)
2012-2015	Department of Civil Eng., University of Malaya (UM) **Postgraduate Research Grant** (IPPP/PG078/2013B)
2013-2015	University of Malaya (UM), Full scholarship under "**Bright Sparks Scheme**" (BSP/APP/1818/2013), as the outstanding researcher.
2015	University of Malaya (UM), **International Conference Grant**, to attend to DAMAS, Ghent University, Ghent, **Belgium**
2017	Northwestern Polytechnical University (NWPU) Fund for a **Postdoctoral Fellowship Program**, Xi'an, China.
2017	**National Science Foundation of China (NSFC) Research Fund for international Young Scientists** (Grant No.: 51750110509)
2018	National Elites Foundation of Iran, **Research Fund**, Tehran, Iran
2021	**Ministry of Cultural Heritage, Handicrafts and Tourism**, Iran. Research project title: "Study of Seismic Vulnerability, Structural Health Monitoring, Presenting Details of Retrofitting and Reinforcement of the Exposed Chimney Constructed in Kerman City, Iran", (Grant no.: 59465-751213), **principal investigator**.
2023	Department of Civil Eng., Higher Education Complex of Bam, Bam, Kerman, Iran. Research project title: "Near Real-Time Structural Damage Detection Using Machine Learning Techniques", (Grant no.: 81167051400), **principal investigator**.

Publications (ISI ranked journals, conference proceedings):

ISI Ranked journals

1. **S.H. Mahdavi**, H.A. Razak, "A wavelet-based approach for vibration analysis of framed structures", ***Applied Mathematics and Computation (Elsevier-Q1)***, 220 (2013)414-428.
2. **S.H. Mahdavi**, H.A. Razak, "Indirect time integration scheme for dynamic analysis of space structures using wavelet functions", ***Journal of Engineering Mechanics (ASCE-Q1)***, DOI: 10.1061/(ASCE) 13 EM.1943-7889.0000914.

3. **S.H. Mahdavi**, H.A. Razak, S. Shojaee, M.S. Mahdavi, "A comparative study on application of Chebyshev and spline methods for geometrically non-linear analysis of truss structures", ***International Journal of Mechanical Sciences (Elsevier-Q1),*** 101 (2015)241-251. DOI: 10.1016/j.ijmecsci.2015.08.001.
4. **S.H. Mahdavi**, H.A. Razak, "Optimum dynamic analysis of 2D frames using free-scaled wavelet functions", ***Latin American Journal of Solids and Structures (Q2)***, 11 (2014)1036-1048.
5. **S.H. Mahdavi**, S. Shojaee, "Optimum time history analysis of SDOF structures using free scales of Haar wavelet", ***Structural Engineering and Mechanics (Q2)***, 45(1) (2013)95-110.
6. **S.H. Mahdavi**, H.A. Razak, "A comparative study on optimal structural dynamics using wavelet functions", ***Mathematical Problems in Engineering (Q2)***, Vol. 2015, Article ID 956793, 10 pages, 2015. DOI: 10.1155/2015/956793.
7. **S.H. Mahdavi**, H.A. Razak, "An efficient iterative scheme using family of Chebyshev's operations", ***Mathematical Problems in Engineering (Q2)***, Vol 2015 (2015), Article ID 205295, 10 pages, 2015. DOI: 10.1155/2015/205295.
8. **S.H. Mahdavi**, H.A. Razak, "An efficient method for dynamic analysis of spatial trusses using Legendre wavelets", ***Arabian Journal for Science and Engineering (Springer-Q2)***, 2015.
9. **S.H. Mahdavi**, H.A. Razak, "Optimal sensor placement for time domain identification using a wavelet-based genetic algorithm", ***Smart Materials and Structures (IOP Publication-Q1)***, 25(6), 2016. 065006.
10. Yu. Zhexing, **S.H. Mahdavi**, C. Xu, "Time-domain spectral element method for impact identification of frame structures using enhanced GAs", ***KSCE Journal of Civil Engineering (Springer-Q۲)***, 2018.
11. **S.H. Mahdavi**, F.R. Rofooei, A. Sadollah, C. Xu, "A wavelet-based scheme for impact identification of framed structures using combined genetic and water cycle algorithms", ***Journal of Sound and Vibration (Elsevier-Q1)***, 2019. DOI.org/10.1016/j.jsv.2018.11.022
12. Y Xu, C., Wu, G., Du, F., Zhu, W., & **Mahdavi, S. H.** (2019). A Modified Time Reversal Method for Guided Wave Based Bolt Loosening Monitoring in a Lap Joint. **Journal of Nondestructive Evaluation *(Springer-Q۲)***, 38(4), 85.
13. **S.H. Mahdavi,** K Azimbeik. "A modified genetic algorithm strategy for optimal sensor exciter placement capable of time domain structural identification". International Journal of Optimization in Civil Engineering. 2022; 12 (4) :517-543.
14. Dehghani, H., Amiri Moghadam, M., & **S.H. Mahdavi** "Optimized Flooring Systems Selection by Analytic Hierarchy Process". International Journal of Optimization in Civil Engineering, 11(3), 397-409, 2021.

	15. Azimbeik, K., **S.H. Mahdavi**, & Rofooei, F. R., "Improved Image-Based, Full-Field Structural Displacement Measurement using Template Matching and Camera Calibration Methods". Measurement (Elsevier-Q1), 112650, 2023. **16. S.H. Mahdavi,** & C. Xu, "Time-Domain Structural Damage Identification Using Ensemble Bagged Trees and Evolutionary Optimization Algorithms". Structural Control and Health Monitoring (Q1), 2023.
Conf. proc.	**1. S.H. Mahdavi**, H.A.Razak, "Optimal time history analysis of 2D trusses using free-scaled wavelet functions", ***Aust. J. Basic & Appl. Sci.,*** 8(19): 127-130, 2014. **2. S.H. Mahdavi,** H.A.Razak, "A wavelet-based scheme for optimum measurement/monitoring of structural responses", ***Journal of Physics: Conference Series*** 628 (2015) 012024, DOI:10.1088/1742-6596/628/1/012024 (DAMAS 2015, Belgium). **3. S.H. Mahdavi,** Zexing Yu and Chao Xu, "Joint-stiffness identification of truss bridges using an enhanced water cycle optimization algorithm", Engineering Mechanics Institute (EMI) International Conference 2018, Shanghai, China. **4**. F. Dehghanpour, **S.H. Mahdavi** and F.R. Rofooei, "Structural identification using water cycle optimization algorithm", the 6th National and 2nd International Conference of Earthquake and Structural Engineering, Kerman, Iran, 2018. **5.** M. Talebi, **S.H. Mahdavi** and F.R. Rofooei, "Application of phased-based displacement measurement of steel frames", the 5th International Conference on Bridge Engineering, Amirkabir Uni. Tehran, Iran, 2019. **6.** M.J. Hosseini, **S.H. Mahdavi** and F.R. Rofooei, "Identification of Ibarra-Medina-Krawinkler hysteresis model parameters using particle swarm optimization algorithm", the 8th International Conference on Seismology and Earthquake Engineering. Tehran, Iran, 2019. **7.** K. Azimbeik, **S.H. Mahdavi** and F.R. Rofooei, "Application of machine-vision in vibration measurement of large-scale structures", the 12th International Congress on Civil Engineering (12ICCE), Ferdowsi Uni, Mashhad, Iran, 2021.

Evaluation activities:

Referee for "***Latin American Journal of Solids and Structures (Q2)***" Referee for "***Smart Materials and Structures (Q1)***" Referee for "***Archives of Civil and Mechanical Engineering (Q1)***" Referee for "***Journal of Sound and Vibration (Q1)***" Referee for "***Journal of Engineering Mechanics (ASCE–Q1)***", member Referee for "***The Structural Design of Tall and Special Buildings (Q2)***" Referee for "***Machine Learning Science and Technologies (Q1)***" Referee for "***Structural Control and Health Monitoring (Q1)***"

Teaching experience:

2015-2016: Dep. of Civil Eng. **UM**	TA for "Computer Programing in Civil Engineering" as a key KPI for PhD full scholarship.
Spring 2017: Aerospace Eng. **NWPU**	"An introduction to Finite Element Method: Computer Programing Part"
Fall 2018: Dep. of Civil Eng., **Sharif University**	"Structural Health Monitoring" (3 credits course for postgraduate candidates)
2019-Present: Dep. of Civil Eng. **Bam Uni.**	BSc.: "Reinforced Concrete I&II", "Foundation Analysis and Design", "Structural Analysis I&II", "Statics", "English for Civil Eng.", "Bridge Eng.", "Earthquake and Wind Eng.". MSc.: "Finite Element Modeling", "Structural Dynamics".
Fall 2023: Dep. of Civil Eng., **Shahid Bahonar University of Kerman**	"Structural Health Monitoring" (3 credits course for postgraduate candidates)

Supervision:

2014-2015 BSc	**Mr. Ng Chyi Chun**; Final year research project: "Optimum analysis and design of large-bay RC slabs using modified genetic algorithms", Department of Civil Engineering, **UM**. Supervisor
2015-2016 MSc	**Mrs. M. S. Mahdavi;** Title: "Geometrically nonlinear analysis of truss structures using Chebyshev Halley algorithms", Dep. Civil Engineering, **Islamic Azad University of Kerman**, Kerman, Iran. Co-supervisor
2018 MSc	**Ms. Fatemeh Dehghanpour;** Title: "Structural health monitoring using metaheuristic optimization algorithms", Dep. Civil Engineering, **Sharif University of Technology,** Tehran, Iran. Co-supervisor
2019 MSc	**Mr. Sina Pourghasem;** Dep. Civil Engineering, **Sharif University of Technology**, Tehran, Iran. Co-supervisor
2019 MSc	**Mr. Shahin Sagharchiha;** Title: "A comparative study on the application of metaheuristic optimization algorithms for identification of Bouc-Wen hysteresis model", Dep. Civil Engineering, **Sharif University of Technology**, Tehran, Iran. Co-supervisor
2019 MSc	**Mr. Amin Hosseini Tehrani;** Title: "Real-time structural health monitoring of nonlinear systems using hysteresis loop analysis", Dep. Civil Engineering, **Sharif University of Technology**, Tehran, Iran. Co-supervisor

2020 MSc	**Ms. Kimia Azim Beig;** Dep. Civil Engineering, **Sharif University of Technology**, Tehran, Iran. Co-supervisor
2020 MSc	**Mr. Mohammad Javad Ghorbanian;** Dep. Civil Engineering, **Sharif University of Technology**, Tehran, Iran. Co-supervisor
2023 MSc	**Mr. Ali Refahi;** Dep. Civil Engineering, **Shahid Bahonar University of Kerman**, Kerman, Iran. Co-supervisor
2023 MSc	**Mr. Shahabi;** Dep. Civil Engineering, **Shahid Bahonar University of Kerman**, Kerman, Iran. Co-supervisor
2023 PhD	**Mr. Dehghani;** Dep. Civil Engineering, **Shahid Bahonar University of Kerman**, Kerman, Iran. Co-supervisor
2023 MSc	**Ms. Khamar;** Dep. Civil Engineering, **Higher Education Complex of Bam**, Bam, Iran. Supervisor

Membership:

2007-present	Professional Engineer (PE), Ministry of Housing and Urban Planning, Iran.
2015-present	American Society of Civil Engineering (ASCE)
2017-present	National Elites Foundation of Iran
2018-present	SHM Group, Sharif Advanced Technologies Incubator, Sharif University of Technology, Tehran, Iran.

Social Media:

https://www.researchgate.net/profile/Seyed-Mahdavi-4
https://scholar.google.com/citations?user=WD-6lHgAAAAJ&hl=en

Last Update: 02/04/2024 [14/01/1403]