

Mehrdad Aghagholizadeh, Ph.D.

Clinical Assistant Professor, M.S. Program Director
Department of Civil and Environmental Engineering
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Engineer in Training (EIT), Designation No.65638 – State of Texas

EDUCATION

University of Central Florida

Ph.D., *Civil Engineering*

December 2018

Research topic: "Seismic Response of Moment-Resisting Frames Coupled with Rocking Walls"

Advisor: Dr. Nicos Makris

Tarbiat Moallem University–Tehran

M. S., *Civil Engineering–Structural*

September 2011

Thesis: "Study on the Relation between Dynamic Characteristics and Damage Index in RC Buildings Using Nonlinear Dynamic Analysis"

Azad University–Tehran

B. Sc., *Civil Engineering*

September 2009

EMPLOYMENT

1/2019–present	Southern Methodist University Clinical Assistant Professor Program Director for M.S. in Civil Engineering Graduate and Undergraduate advising
8/2018–1/2019	University of Central Florida Instructor
1/2014–8/2018	University of Central Florida Research Assistant Department of Civil, Environmental and Construction Engineering
8/2014–7/2018	University of Central Florida Graduate Teaching Assistant Mechanics of Materials (Lab Instructor), Structural Analysis, Statics
6/2011–12/2013	S. O. Pasargad Engineering Company (Tehran, Iran) Structural Engineer

RESEARCH INTERESTS

Structural Dynamics, Seismic Isolation, Earthquake Engineering, Seismic Resilience and Sustainability, Vision-based Damage Detection, Machine Learning, Performance-Based Design, Bridge Engineering, Structural Health Monitoring, Structural Rocking, Model Updating, Prestressed Concrete, Finite Element Method

RESEARCH EXPERIENCES

- 2019-present: Earthquake Resilient Design of Tall Buildings with Core-Rocking-Walls (**Co-PI**, Proposal under preparation to be submitted to NSF, Engineering for Civil Infrastructure (ECI))
- 2019-present: Earthquake Vulnerability of World Heritage: A collaborative approach to assessing the seismic response and stability of statues on Easter Island (Rapa Nui) (**Co-PI**), NSF Senior Archaeology Award Info and (**Co-PI**) Interdisciplinary Proposal with SMU Department of Anthropology submitted to SMU Seed funding in Science and Engineering)
- 2019-present: Vision-based post earthquake damage detection and classification
- 2016-2019: Dynamics of moment-resisting frames coupled with a rocking wall
- 2015-2016: Bridges with rocking piers, and effect of flexibility in rocking blocks
- 2014-2015:
 - Structural Health Monitoring of Bright House Networks Football Stadium at UCF
 - Bridge FE Model Updating
 - Reliability and Load Rating comparison between FIB and AASHTO girders Bridges
- 2011-2014: Structural design and construction of concrete/steel structures
- 2011-2012: Damage assessment of structures using period elongation

AWARDS

- 2020: **J. James R. Croes Medal**, American Society of Civil Engineers (ASCE)
– For the paper, "Effect of Supplemental Hysteretic and Viscous Damping on Rocking Response of Free-Standing Columns," Journal of Engineering Mechanics
- 2019: **Stella Porter and Lester A. Russell Award**, Southern Methodist University
– For teaching efforts
- 2018: **Graduate Presentation Fellowship**, University of Central Florida
– Engineering Mechanics Institute Conference, ASCE (EMI 2018), Cambridge, MA
- 2017: **Graduate Presentation Fellowship**, University of Central Florida
– EERI 69th Annual Meeting, Portland, Oregon

SOFTWARE SKILLS

MATLAB, OpenSees, Python, Wolfram Mathematica, SAP2000, ETABS, SAFE, CSi Bridge, AutoCAD, IDARC, L^AT_EX, MS Office Package

Journal Articles:

1. Aghagholizadeh, M. and Makris, N. (2020) "Response Analysis of Yielding Structures Coupled with Rocking Walls with Supplemental Damping". *Journal of Structural Engineering, ASCE, under review.*
2. Aghagholizadeh, M. (2020), "A finite element model for seismic response analysis of damped rocking columns", *Engineering Structures, under second round of reviews.*
3. Makris, N. and Aghagholizadeh, M. (2019), "The Effect of Supplemental Hysteretic and Viscous Damping on the Rocking Response of Free-Standing Columns", *Journal of Engineering Mechanics, ASCE. 145(5):04019028.*
4. Aghagholizadeh, M. and Catbas, N. (2019), "Comparative Analysis and Evaluation of Two Prestressed Girder Bridges", *Current Trends in Civil & Structural Engineering, 3(5):000572.*
5. Aghagholizadeh, M. and Makris, N. (2018), "Earthquake Response Analysis of a Yielding Structure Coupled with a Vertically Restrained Rocking Wall", *Earthquake Engineering & Structural Dynamics. 47(15):2965–2984*
6. Aghagholizadeh, M. and Makris, N. (2017), "Seismic Response of a Yielding Structure Coupled with a Rocking Wall", *Journal of Structural Engineering, ASCE, 144(2):04017196*
7. Makris, N. and Aghagholizadeh, M. (2017), "The dynamics of an elastic structure coupled with a rocking wall", *Earthquake Engineering & Structural Dynamics, 46(6):945–962*
8. Aghagholizadeh, M. and Massumi, A. (2016), "A new method to assess damage to RCMRFs from period elongation and Park–Ang damage index using IDA", *International Journal of Advanced Structural Engineering, 8(3):243–252.*

under preparation:

Aghagholizadeh, M. and Makris, N. "Seismic Response of Moment-Resisting Frames Coupled with Rocking Walls", Report for Pacific Earthquake Engineering Research Center (PEER), Berkeley, CA.

Book Chapter:

9. Aghagholizadeh, M. and Catbas, F. N. (2015), "A Review of Model Updating Methods for Civil Infrastructure Systems", *Computational Techniques for Civil and Structural Engineering, Saxe-Coburg Publications, Stirlingshire, UK, Chapter 4, pp 83-99.*

Conference Proceedings:

10. Aghagholizadeh, M. and Makris, N (2020), "Seismic Response of Tall Buildings Coupled with Rocking Walls", 17th World Conference on Earthquake Engineering, Sandai, Japan.
11. Aghagholizadeh, M. and Makris, N (2019), "The Role of Supplemental Damping on the Rocking Response of Free-Standing Columns", Engineering Mechanics Institute Conference, ASCE (EMI 2019), Pasadena, CA.
12. Aghagholizadeh, M. and Makris, N (2019), "Earthquake Response Analysis of Yielding Structures Coupled with Rocking Walls", 2nd International Conference on Natural Hazards & Infrastructure, Chania, Greece.

13. Aghagholizadeh, M. and Makris, N (2018), "Seismic Response of Yielding Frames Coupled With Restrained Rocking Walls", 16th European Conference on Earthquake Engineering, Thessaloniki, Greece.
14. Aghagholizadeh, M. and Makris, N. (2018), "Dynamic response of inelastic frames coupled with vertically restrained rocking walls.", Engineering Mechanics Institute Conference, ASCE (EMI 2018), Cambridge, MA.
15. Makris, N and Aghagholizadeh, M. (2017), "Earthquake Protection of a Yielding Frame with a Rocking Wall.", International Workshop on Performance-Based Seismic Design of Structures (PESDES 2017), eds.: Beskos, D., Zhou, Y., Qian, J, and Lu, X., Tongji University, Shanghai, China.
16. Makris, N. and Aghagholizadeh, M. (2017), "Earthquake Response of a Yielding Frame Coupled with a Rocking Wall." Engineering Mechanics Institute Conference, ASCE (EMI 2017), San Diego, California. [Keynote]
17. Aghagholizadeh, M. and Makris, N. (2017), "The Dynamics of a Structure Coupled with a Rocking Wall", EERI 69th Annual Meeting, Portland, Oregon.
18. Aghagholizadeh, M. and Massumi, A. (2012), "Relation between Dynamic Characteristics and Damage Index of RC-MRFs Using Non-Linear Incremental Dynamic Analyses", Proceedings of the 15th World Conference on Earthquake Engineering (15WCEE), Lisbon, Portugal.

Other:

19. Aghagholizadeh, M. (2018), "Study on Dynamics of an Elastic Oscillator Coupled with a Rocking Wall", arXiv:1803.02669.

Journal Reviewer:

ACI Structural Journal

Journal of Earthquake Engineering

Journal of Structural Engineering, ASCE

Structural Engineering and Mechanics, An International Journal (Techno-Press)

Proceedings of the Institution of Civil Engineers Journal–Bridge Engineering

Frontiers in Built Environment (Earthquake Engineering)

TEACHING INTERESTS

Structural Analysis, Structural Dynamics, Earthquake Engineering, Mechanics of Materials, Statics, Design of Concrete Structures, Prestressed Concrete, Finite Element Analysis, Matrix Structural Analysis

TEACHING EXPERIENCES

- CEE2340-Mechanics of Deformable Bodies, Spring-Fall 2019, Southern Methodist University (SMU)
- CEE2310-Statics, Fall 2019, SMU
- CEE4351-Design of Concrete Structures, Spring 2020, SMU
- CEE7361-Matrix Structural Analysis and Introduction to Finite Element Methods, Fall 2019, SMU
- CEE2361-Construction Materials, Spring 2019 and 2020, SMU
- CEE7373-Prestressed Concrete, Spring 2019 and 2020, SMU

- EGN3331-Mechanics of Materials, Fall 2019, University of Central Florida (UCF)
- EGN3331-Mechanics of Materials (Lab Instructor), 2017–2018, UCF
- CES4100-Structural Analysis I and Lab (Lab Instructor), 2016–2018, UCF

PROFESSIONAL SOCIETIES

- Texas Board of Professional Engineers (TBPE) – Engineer in Training (EIT), Designation No.65638
- American Society of Civil Engineers (ASCE) and (SEI) – Associate Member
- Structural Engineering Association of Texas (SEAOt) – Member
- American Concrete Institute (ACI) – Member
- American Institute of Steel Construction (AISC) – Educator member
- Earthquake Engineering Research Institute (EERI) – Member
- Tehran Construction Engineering Organization – P. E. equivalent in Iran

CERTIFICATES

2015: "Bayesian Uncertainty Quantification: Theory, Computational Tools, and Applications", Instructors: Prof. Costas Papadimitriou, Prof. Babak Moaveni

2014: "Operational Modal Analysis: Background, Theory and Practice", Instructors: Prof. Carlos E. Ventura, Prof. Svend Gade

CONFERENCES

2019: ASCE, Engineering Mechanics Institute (EMI)
Pasadena, California

2019: ASCE, Civil Engineering Education Summit
Dallas, Texas

2018: ASCE, Engineering Mechanics Institute (EMI)
Cambridge, Massachusetts

2017: ASCE, Engineering Mechanics Institute (EMI)
San Diego, California

2017: EERI 69th Annual Meeting
Portland, Oregon

2014, 2015: Society for Experimental Mechanics (SEM) IMAC
Orlando, Florida

2012: 15th World Conference on Earthquake Engineering (15WCEE)
Lisbon, Portugal

LANGUAGES

English, Persian (Mother tongue)