

## Curriculum Vitae

### Reza Rafiee-Dehkharghani

---

#### **Affiliation:**

School of Civil Engineering, College of Engineering  
University of Tehran,  
Tehran, IRAN  
Tel: +98-21-61112182  
Fax: +98-21-66403808  
Email: [rezarafiee@ut.ac.ir](mailto:rezarafiee@ut.ac.ir)  
Website: [rezarafiee.com](http://rezarafiee.com)

#### **EDUCATION**

- **Ph.D.** in Computational Mechanics  
University at Buffalo, State University of New York, Buffalo, USA, 2015  
Major Advisor: Professor A. J. Aref  
Co-advisor: Professor G. F. Dargush
- **M.S.** in Computational Mechanics (Course-Based Master's degree)  
University at Buffalo, State University of New York, Buffalo, USA, 2011
- **M.S.** in Geotechnical Engineering  
University of Tehran, Tehran, IRAN, 2009
- **B.S.** in Civil Engineering  
University of Tehran, Tehran, IRAN, 2006

#### **RESEARCH SUMMARY**

Dr. Rafiee conducts research in Computational Mechanics related to the real-world problems within the field of Geotechnical Engineering, Earthquake Engineering, and Engineering Mechanics/Dynamics.

Dr. Rafiee has recently worked on the following research topics:

- Design of wave barriers for mitigation of horizontal and vertical seismic waves
- Design of wave barriers for mitigation of train-induced vibrations
- Analytical and numerical simulation of the behavior of stone-columns
- Topology Optimization for design of wave barriers
- Dynamic behavior of single and group piles
- Analytical/Numerical wave-based approach for wave propagation analysis of complex engineering systems.

## **AWARDS**

- “CSEE Chair’s Recognition Graduate Award, 2014”. Awarded by Department of Civil, Structural, and Environmental Engineering, SUNY, University at Buffalo.
- *Dr. Kazemi-Ashtiani’s Award (Amount: 200 million Iranian Rials), 2017*. Awarded by National Elites Foundation, Presidency of Islamic Republic of Iran.

## **RESEARCH GRANTS:**

1. A new analytical-numerical approach for continuous stress wave propagation modeling in complex engineering systems/structures  
PIs: Dr. Reza Rafiee-Dehkharghani and Dr. Mahdi Samadzad  
**Sponsor:** Iran National Science Foundation (INSF), 2017-2019  
Effort: 50%
2. Evaluation of the performance of Tehran’s highways’ medians considering with the focus on the landscaping design, drainage, and vehicle collision  
PIs: Dr. Reza Rafiee-Dehkharghani Dr. Mahdi Samadzad, and Dr. Keyvan Aghabeyk  
**Sponsor:** Deputy of Technical and Development Affairs – Tehran Municipality, 2017-2018  
Effort: 33.33%

## **COURSES TAUGHT:**

### **Undergraduate Courses:**

1. Engineering Mechanics – Dynamics (University of Tehran)  
Fall 2016, Fall 2017
2. Soil Mechanics Laboratory (University of Tehran)  
Fall 2016, Spring and Fall 2017, Spring 2018
3. Ground Improvement (University of Tehran)  
Spring 2018
4. Engineering Mechanics – Statics (University at Buffalo)  
Fall 2013
5. Structural Analysis I (University at Buffalo)  
Summer 2014

### **Graduate Courses:**

- Advanced Engineering Mathematics (University of Tehran)  
Fall 2015, Fall 2016, Fall 2017

- Advanced Foundation Engineering (Islamic Azad University)  
Fall 2015, Spring and Fall 2016, Spring and Fall 2017, Spring 2018-01-08
- Finite Element Method (Islamic Azad University)  
Spring and Fall 2015, Spring 2016

## **RESEARCH SUPERVISION:**

### **As an Advisor:**

1. Ali Farahani, “A New Analytical-numerical Continuous Wave-based Approach for Analyzing Dynamic Behavior of Single and Group Piles”, 2017-present
2. Mohammad Eskandari-Ghadi, “Topology Optimization of Wave Barriers for Mitigation of Rotary Machine-induced Ground Vibrations”, 2017-present
3. Shahriar Abolhasanzadeh, “Optimal design of wave barriers for mitigation of underground train-induced vibrations”, 2018-present
4. Mohammadreza Lakestani-Asl, “Numerical modeling of Stone column-improved grounds subjected to dynamic loadings”, 2018-present
5. Faezeh Hashemi, “TBD”, 2018-present

### **As a Co-Advisor:**

1. Reza Zamani, “Numerical Evaluation of Capability of Spectral Analysis Method For Laminar Damage Detection In Structures”, 2015-2016
2. Amir Rezaie, “Soil-buried Wave Barriers for Vibration Control of Structures Subjected to Vertically Incident Shear Waves”, 2016-2017
3. Majid Zakerinia, “Effects of Geometric and Mechanical Parameters on the Behavior of Stone-Columns- Numerical Investigation”, 2016-2017
4. Sadyar Sarraf ” Isolation System for Mitigation of Horizontal Seismic Waves Effects”, 2016-2018
5. Samyar Sarraf “Isolation System for Mitigation of Vertical Seismic Waves Effects”, 2016-2018
6. Farbod Yarmohammdi, “Mitigation of Ground Vibrations Caused by Train-generated Surface Waves Using Wave Barriers”, 2016-2018
7. Farnood Farsijani, “Study on seismic performance of steel frames having in plan non-straight beams”, 2016-present

### As a Committee Member:

1. Marzieh Shahraki, “Comparison Between the Operation of Stone-columns and Other Soil Improvement Methods”, 2015-2017

### PUBLICATIONS:

#### Journal Papers:

1. Fuhrman, D., **Rafiee-Dehkharghani, R.**, Lopez, M. M., Aref, A. J., O’connor, J. “Field Performance of a New Fiber Reinforced Polymer Deck”, ASCE Journal of Performance of Constructed Facilities, 2014. 29(6): p. 04014162.
2. **Rafiee-Dehkharghani, R.**, Aref, A. J., Dargush, G. F. “Characterization of multi-layered stress wave attenuators subjected to impulsive transient loadings”, ASCE Journal of Engineering Mechanics, 2014. 141(4): p. 04014137.
3. **Rafiee-Dehkharghani, R.**, Aref, A. J., Dargush, G. F. “Planar stress wave attenuation in plates with circular voids and inclusions”, Composites Part B, 2015. 75: p. 307-318
4. **Rafiee-Dehkharghani, R.**, Bansal, D., Aref, A. J., Dargush, G. F. “Interface profile optimization for planar stress wave attenuation in bi-layered plates”, Composites Part B, 2015. 82: p. 129-142.
5. **Rafiee-Dehkharghani, R.**, Aref, A. J., Dargush, G. F. “Stress wave attenuation in non-collinear structures subjected to impulsive transient loadings”, ASCE Journal of Engineering Mechanics, 2016. 142(5): p. 04016014
6. **Rafiee-Dehkharghani, R.**, Bansal, D., Aref, A. J., Dargush, G. F. “Analysis and Optimal Design of Stress Wave Intensity Attenuation in Layered Structures”, International Journal of Structural Stability and Dynamics, 2017. 18(1), 18500115.
7. Dolatshahi, K.M., Rezaie, A., **Rafiee-Dehkharghani, R.** “Topology Optimization of Wave Barriers for Mitigation of Vertical Component of Seismic Ground Motions”, Journal of Earthquake Engineering, 2017.
8. **Rafiee-Dehkharghani, R.**, Ghyasvand, S., Sahebalzamani, P. “Dynamic Behavior of Masonry Arch Bridge under High-Speed Train Loading: Veresk Bridge Case Study”, ASCE Journal of Performance of Constructed Facilities, 2018.
9. Rezaie, A., **Rafiee-Dehkharghani, R.**, Dolatshahi, K.M., Mirghaderi, R. “Soil-buried wave barriers for vibration control of structures subjected to vertically incident shear waves”, Soil Dynamics and Earthquake Engineering, 2018.

### **Conference Papers:**

1. Zamani, R., **Rafiee-Dehkharghani, R.**, Dolatshahi, K. M. “Detection of reduced cross-section area in the semi-finite two-part rods using the fast Fourier transform”, 9th National Congress on Civil Engineering, Mashhad University, Iran, 2016.
2. **Rafiee-Dehkharghani, R.**, Ghalandarzadeh, A., Moradi, M. “Anisotropic behavior of silty sands by means of undrained monotonic triaxial tests”, Int. Conf. on Performance-Based Design in Earthquake Geotechnical Engineering, IS-Tokyo 2009.
3. **Rafiee-Dehkharghani, R.**, Ghalandarzadeh, A., Moradi, M. “Effect of anisotropic consolidation on undrained behavior of sand and silt mixtures”, 8th International Congress on Civil Engineering, Shiraz University, Iran, 2009.
4. Zakerinia, M. **Rafiee-Dehkharghani, R.**, Behnia, C. “A numerical study on the settlement of granular bed-stone column improved grounds”, 11<sup>th</sup> International Congress on Civil Engineering, University of Tehran, Iran, 2018.
5. Shahraki, M. **Rafiee-Dehkharghani, R.**, Behnia, C. “A numerical study on the behavior of composite and non-composite stone columns”, 11<sup>th</sup> International Congress on Civil Engineering, University of Tehran, Iran, 2018.
6. Eskandari-Ghadi, M. **Rafiee-Dehkharghani, R.** “Two-dimensional topology optimization of shallow foundation”, 11<sup>th</sup> International Congress on Civil Engineering, University of Tehran, Iran, 2018.
7. Rezaie, A., **Rafiee-Dehkharghani, R.**, Dolatshahi, K.M., Mirghaderi, R. “Optimally Located Wave Barriers for Reducing Horizontal Vibrations Induced by Earthquake”, 16<sup>th</sup> European Conference on Earthquake Engineering, Thessaloniki, Greece, 2018.

### **Conference Presentations:**

1. **Rafiee-Dehkharghani, R.**, Aref, A. J., Dargush, G. F. “Effect of material setup and geometry on the wave propagation characteristics of layered structures”, Engineering Mechanics Institute (EMI) Conference, August 4-7, 2013, Evanston, IL.
2. **Rafiee-Dehkharghani, R.**, Aref, A. J., Dargush, G. F. “Numerical investigation of periodic structures under short period transient loading”, Engineering Mechanics Institute (EMI) Conference, June 17-20, 2012, University of Notre Dame., Notre Dame, IN.
3. **Rafiee-Dehkharghani, R.**, Aref, A. J., Dargush, G. F. “Attenuation of blast loading using functionally graded protective systems”, Engineering Mechanics Institute (EMI) Conference, June 2-4, 2011, Northeastern Univ., Boston, MA.
4. **Rafiee-Dehkharghani, R.**, Aref, A. J., Dargush, G. F. “Development of functionally graded protective systems for attenuation of blast loading”, NSF CMMI Research and Innovation Conference, January 4-7, 2011, Atlanta, GA.

## **PROFESSIONAL SERVICE:**

### **Technical Referee:**

- Journal of Engineering Mechanics, ASCE
- Journal of Structural Engineering, ASCE
- Journal of Bridge Engineering, ASCE
- International Journal of Structural Stability and Dynamics, World Scientific
- Civil Engineering Infrastructures Journal (CEIJ)
- Journal of Structure and Steel, Iranian Society of Steel Structures
- Modares Civil Engineering Journal (MCEJ)

### **Professional Societies and Technical Committee Membership**

- Member of Iranian Geotechnical Society
- Member of Alumni Association of the Faculty of Eng. of university of Tehran
- Committee Member of National Blast Engineering Code of Iran (Mabhas 21)

### **Conferences and seminars:**

- Executive Committee Member of 5th Int. Conf. on Geotechnical Eng. & Soil Mech. (14-16 November 2016, Tehran, IRAN)
- Scientific Committee member of 11<sup>th</sup> International Congress on Civil Engineering (8-10 May 2018, Tehran, IRAN)