

CURRICULUM VITAE



P. Zakian

Assistant Professor of Earthquake Engineering

1. Personal Data

Name: Pooya
Family Name: Zakian
Nationality: Iranian
Address: Department of Civil Engineering, Faculty of Engineering, Arak University, Arak, Iran
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2. Education

B.Sc. Civil Engineering, University of Mohaghegh Ardabili, Ardabil, Iran, 2010.

M.Sc. Earthquake Engineering, Iran University of Science and Technology, Tehran, Iran, 2012.

Thesis: Meta-heuristics for analysis and optimal design of shear walls considering the dynamic behavior of the structures;
Supervisor: Prof. Ali Kaveh

Ph.D. Earthquake Engineering, Tarbiat Modares University, Tehran, Iran, 2016.

Dissertation: Development of a stochastic spectral finite element method (StSFEM) for analysis of faulting-induced seismic wave propagation problems;
Supervisor: Prof. Naser Khaji; *Advisor:* Dr. Masoud Soltani Mohammadi

3. Awards & Honors

Ph.D. research prize awarded by Iran National Elites Foundation, 2015
Ph.D. research prize awarded by Iran National Elites Foundation, 2016
Ranked 17th in the national earthquake engineering entrance exam for PhD degree, 2012
Distinguished Ph.D. student at Tarbiat Modares University
Distinguished graduated student elected by Iran National Elites Foundation

4. Memberships

Member of Iranian Mathematical Society
Member of Iranian Society of Mechanical Engineers
Member of Iranian Construction Engineering Organization, Civil Engineering

5. Teaching Experiences

Lecturer at University of Guilan, Rasht, Iran, 2017
Lecturer at National Universities, Tehran, Iran, 2015-2017
Teaching Assistant at Tarbiat Modares University, Tehran, Iran, 2014-2016
Lecturer at Academic Institutes, Ramsar, Iran, 2014-2015

6. Research Interests

Computational Mechanics
Computational Mathematics
Stochastic Structural Mechanics

Earthquake Engineering
Structural Dynamics
Wave Propagation

Optimal Structural Analysis
Structural Optimization
Performance Based Design

7. Publications

7a) Papers in Journals

- [1] Kaveh A, Zakian P. "Optimal design of steel frames under seismic loading using two meta-heuristic algorithms", *Journal of Constructional Steel Research*, 82 (2013) 111-130.
- [2] Kaveh A, Zakian P. "Performance based optimal seismic design of RC shear walls incorporating soil-structure interaction using CSS algorithm", *International Journal of Optimization in Civil Engineering*, 2(3) (2012) 383-405.
- [3] Kaveh A, Zakian P. "Optimal seismic design of reinforced concrete shear wall-frame structures", *KSCE Journal of Civil Engineering*, 18(7) (2014) 2181-2190.
- [4] Kaveh A, Zakian P. "Enhanced bat algorithm for optimal design of skeletal structures", *Asian Journal of Civil Engineering*, 15(2) (2014) 179-212.
- [5] Kaveh A, Zakian P. "Seismic design optimisation of RC moment frames and dual shear wall- frame structures via CSS algorithm", *Asian Journal of Civil Engineering*, 15(3) (2014) 435-465.
- [6] Kaveh A, Aghakouchak A.A, Zakian P. "Reduced record method for efficient time history dynamic analysis and optimal design", *Earthquakes & Structures*, 8(3) (2015) 637-661.
- [7] Zakian P, Khaji N. "A novel stochastic-spectral finite element method for analysis of elastodynamic problems in the time domain", *Meccanica*, 51(4) (2016) 893-920.
- [8] Kaveh A, Zakian P. "Stability based optimum design of concrete gravity dam using CSS, CBO and ECBO algorithms", *International Journal of Optimization in Civil Engineering*, 5(4) (2015) 419-431.
- [9] Kaveh A, Zakian P. "An efficient seismic analysis of regular skeletal structures via graph product rules and canonical forms", *Earthquakes & Structures*, 10(1) (2016) 25-51.
- [10] Livani M.A, Khaji N, Zakian P. "Damage identification of cracks in structures via extended finite element method and particle swarm optimization", *Modares Civil Engineering*, Modares Civil Engineering, 16(5) (2017) 177-189 (In Persian).
- [11] Zakian P, Khaji N. "Development of higher-order stochastic spectral finite element method for uncertainty analysis of 2D continua", *Modares Mechanical Engineering*, 16(7) (2016) 51-60 (In Persian).
- [12] Zakian P, Khaji N. "Spectral finite element simulation of seismic wave propagation and fault dislocation in elastic media", *Asian Journal of Civil Engineering (BHRC)*, 17 (8) (2016) 1189-1213.
- [13] Khaji N, Zakian P. "Uncertainty analysis of elastostatic problems incorporating a new hybrid stochastic-spectral finite element method", *Mechanics of Advanced Materials and Structures*, 24 (12) (2017), 1030-1042.
- [14] Zakian P. "An efficient stochastic dynamic analysis of soil media using radial basis function artificial neural network", *Frontiers of Structural and Civil Engineering*, ([Article in Press](#)).

[15] Zakian P, Khaji N, Kaveh A. "Graph theoretical methods for efficient stochastic finite element analysis of structures", *Computers & Structures*, 178 (2017) 29-46.

[16] Zakian P, Khaji N, Soltani M. "A Monte Carlo adapted finite element method for dislocation simulation of faults with uncertain geometry", ([Article in Press](#)).

[17] Livani M.A, Khaji N, Zakian P. "Identification of multiple flaws in structures using dynamic extended spectral finite element method with a universally enhanced meta-heuristic optimizer, *Structural and Multidisciplinary Optimization*, ([Article in Press](#)).

7b) Papers in Conferences

[1] Zakian P, Khaji N. "A stochastic-spectral finite element method applied to the analysis of stochastic structural mechanics problems", 10th International Congress on Civil Engineering, 5-7 May 2015, University of Tabriz, Tabriz, Iran.

[2] Zakian P, Khaji N. "A stochastic-spectral finite element method for analysis of elasto-dynamic problems", 7th International Conference on Seismology & Earthquake Engineering, 18-21 May 2015, Tehran, Iran.

[3] Zakian P, Khaji N. "A new approach for stochastic analysis of cyclically symmetric structures", 3rd Iran International Conference on Structural Engineering, 19-20 February 2017, Olympic Hotel, Tehran, Iran.

[4] Zakian P, Khaji N. "Monte Carlo simulation in finite element analysis of fault with random length", 10th National Congress on Civil Engineering, 19-20 April 2017, Sharif University of Technology, Tehran, Iran, (In Persian, keynote speaker).

Scopus Hyperlink: www.scopus.com/Pooya Zakian

Researchgate Hyperlink: www.researchgate.net/profile/P_Zakian

8. Selected Research Projects

Research assistant at Tarbiat Modares University (TMU), 2015- 2017

Research collaboration with Center of Excellence for Fundamental Studies in Structural Engineering, Iran University of Science and Technology (IUST), 2012-2017

Damage detection of structures using XFEM and optimization algorithms, Tarbiat Modares University (TMU), 2015-2016

9. Scientific Review Experiences

- (Co-)Reviewer for several international journals as follows:

Computers & Structures	Advances in Engineering Software
Engineering Structures	Structural Engineering & Mechanics
Structural Design of Tall & Special Buildings	Engineering Optimization
Earthquake Engineering & Engineering Vibration	Engineering with Computers

- Reviewer for 10th National Congress on Civil Engineering, Sharif University of Technology, Tehran, Iran.

10. Language Skills

Persian (native)

English