

Hamed Dabiri

PhD, Structural Engineering

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Education

- Visiting PhD researcher, 2022
University of Birmingham, Birmingham, UK.
- PhD in Structural engineering, 2019-2022
University of Camerino, Camerino, Italy.
Ph. D. thesis title: “*New approach for seismic hazard analysis and earthquake damage scenarios*”
- Master of Science in Structural Engineering, 2014
Semnan University, Semnan, Iran. GPA: 17.19/20 (3.7/4)
M. Sc. Thesis: “*The Seismic Behavior of RC Column with Elastomeric Pad*”.
- Bachelor of Science in Civil Engineering, 2010
Imam Khomeini International University, Qazvin, Iran.

Fields of Interest

- Analysis and design of structures
- Seismic hazard and risk assessment
- Composite structures
- Rehabilitation and seismic retrofitting
- Computational modeling and nonlinear finite element analysis
- Using advanced and innovative materials in structural elements
- Dynamic behavior of elements including shear walls, beam-column joints and columns
- Reinforcement bar splice methods in RC elements including columns, beams and joints
- Machine learning-based methods in civil and structural engineering

Teaching and Research Experiences

- Teaching assistant, 2013
- ✓ Faculty of structural engineering, Semnan University, Semnan, Iran.
Courses: Reinforced Concrete Structures 1&2, Concrete Technology, Advanced Reinforced Concrete Structures
- A member of Graduate Research Team (mentoring master students), 2014-now
- ✓ Faculty of structural engineering, Semnan University, Semnan, Iran.
Research topics: Seismic behavior of RC joints, incorporating mechanical and forging splices in RC elements

Industrial Experiences

- **Structural Designer**, 2011-2012
Pardazesh Fanavari Mohandesi Parsian Co., Tehran, Iran.
- **Structural Designer** (Industrial Structures), 2012-2014
Pulad Ajand-e-Jam Consulting Engineering Co., Tehran, Iran.
- **Structural Designer** (Bitumen Refinery), 2014-2015
Roham Sperlus Co., Tehran, Iran.
- **Work Shop Manager** (Bitumen Refinery), 2015-2017
Roham Sperlus Co., Tehran, Iran.
- **Manager of Civil Department** (136-unit residential complex and industrial projects), 2017-2018
Roham Sperlus Co., Tehran, Iran.
- **Structural designer** (Industrial Structures), Part Time
Saze Soroush Consulting Engineering Co., Alborz, Iran.
- **Structural designer** (Industrial Structures), Part Time
Ase Sanaat Consulting Engineering Co., Tehran, Iran.

Book

- **Dabiri, H.**, Mosayebzadeh, M. and Khazaei, M., (2018), *RC Bridges; Failure Modes, Resistant Design and Retrofitting Methods*, Sokhanvaran Press. (In persian)

Under review journal papers

- Kiumarsi, M., **Dabiri, H.**, & Kandiri, A. (2022). *Machine Learning-Based Methods for Predicting Compressive Strength of Ground Granulated Blast Slag (GGBS) Concrete*, *Case Studies in Construction Materials*, Under review
- **Dabiri, H.**, Faramarzi, A., Dall'Asta, A., Tondi, E., Morici, M., (2022), *Predicting Fragility Curves of RC structures Using ML-based techniques*, *Engineering Structures*, under review
- Kheyroddin, A., Javan, D., & **Dabiri, H.** (2022). *Influence of GFRP-to-steel reinforcement ratio on the cyclic behavior of RC beam-column joints*, *Journal of Building Engineering*, under review

Published Journal Papers

- **Dabiri, H.**, Farhangi, V., Moradi, M. J., Zadehmohamad, M., & Karakouzian, M. (2022). *Applications of Decision Tree and Random Forest as Tree-Based Machine Learning Techniques for Analyzing the Ultimate Strain of Spliced and Non-Spliced Reinforcement Bars*. *Applied Sciences*, 12(10), 4851. [doi:10.3390/app12104851](https://doi.org/10.3390/app12104851)
- **Dabiri, H.**, Kheyroddin, A., & Faramarzi, A. (2022). *Predicting tensile strength of spliced and non-spliced steel bars using machine learning- and regression-based methods*. *Construction and Building Materials*, 325, 126835. [doi:10.1016/j.conbuildmat.2022.126835](https://doi.org/10.1016/j.conbuildmat.2022.126835)
- **Dabiri, H.**, Kioumars, M., Kheyroddin, A., Kandiri, A., & Sartipi, F. (2022). *Compressive strength of concrete with recycled aggregate; a machine learning-based evaluation*. *Cleaner Materials*, 3, 100044. [doi:10.1016/j.clema.2022.100044](https://doi.org/10.1016/j.clema.2022.100044)
- **Dabiri, H.**, Rahimzadeh, K., & Kheyroddin, A. (2022). *A comparison of machine learning- and regression-based models for predicting ductility ratio of RC beam-column joints*. *Structures*, 37, 69–81. [doi:10.1016/j.istruc.2021.12.083](https://doi.org/10.1016/j.istruc.2021.12.083)
- **Dabiri, H.**, Kheyroddin, A., & Dall'Asta, A. (2022). *Splice methods used for reinforcement steel bars: A state-of-the-art review*. *Construction and Building Materials*, 320, 126198. [doi:10.1016/j.conbuildmat.2021.126198](https://doi.org/10.1016/j.conbuildmat.2021.126198)
- **Dabiri, H.**, & Kheyroddin, A. (2021). *An experimental comparison of RC beam-column joints incorporating different splice methods in the beam*. *Structures*, 34, 1603–1613. [doi:10.1016/j.istruc.2021.08.101](https://doi.org/10.1016/j.istruc.2021.08.101)
- Kheyroddin, A., Rouhi, S., & **Dabiri, H.** (2021). *An experimental study on the influence of incorporating lap or forging (GPW) splices on the cyclic performance of RC columns*. *Engineering Structures*, 241, 112434. [doi:10.1016/j.engstruct.2021.112434](https://doi.org/10.1016/j.engstruct.2021.112434)
- Dall'Asta, A., **Dabiri, H.**, Tondi, E., & Morci, M. (2021). *Influence of time-dependent seismic hazard on structural design*. *Bulletin of Earthquake Engineering*, 19(6), 2505–2529. [doi:10.1007/s10518-021-01075-3](https://doi.org/10.1007/s10518-021-01075-3)
- Kaviani, A., **Dabiri, H.**, & Kheyroddin, A. (2021). *Effect of beam and column dimensions on the behavior of RC beam-column joints*. *Asian Journal of Civil Engineering*, 22(5), 941–958. [doi:10.1007/s42107-021-00356-1](https://doi.org/10.1007/s42107-021-00356-1)
- Kheyroddin, A., & **Dabiri, H.** (2020). *Cyclic performance of RC beam-column joints with mechanical or forging (GPW) splices; an experimental study*. *Structures*, 28, 2562–2571. [doi:10.1016/j.istruc.2020.10.071](https://doi.org/10.1016/j.istruc.2020.10.071)
- **Dabiri, H.**, Kaviani, A., & Kheyroddin, A. (2020). *Influence of reinforcement on the performance of non-seismically detailed RC beam-column joints*. *Journal of Building Engineering*, 31, 101333. [doi:10.1016/j.jobbe.2020.101333](https://doi.org/10.1016/j.jobbe.2020.101333)
- Kheyroddin, A., Mohammadkhah, A., **Dabiri, H.**, & Kaviani, A. (2020). *Experimental investigation of using mechanical splices on the cyclic performance of RC columns*. *Structures*, 24, 717–727. [doi:10.1016/j.istruc.2020.01.043](https://doi.org/10.1016/j.istruc.2020.01.043)
- **Dabiri, H.**, Kheyroddin, A. and Kaviani, A., (2019), *A Numerical Study on the Seismic Response of RC Wide Column-Beam Joints*, *International Journal of Civil Engineering*, 17(3), 377-395, [doi:10.1007/s40999-018-0364-2](https://doi.org/10.1007/s40999-018-0364-2)
- **Dabiri, H.**, Sharbatdar, M. K., Kaviani, A., and Baghdadi, M. (2018). *The Influence of Replacing Sand with Waste Glass Particle on the Physical and Mechanical Parameters of Concrete*. *Civil Engineering Journal*, 4(7), 1646-1652. [doi:10.28991/cej-03091101](https://doi.org/10.28991/cej-03091101).
- **Dabiri, H.** and Kheyroddin, A. (2017). *An Analytical Study into the Seismic Behavior of RC Pier with Elastomeric Materials*. *Asian Journal of Civil Engineering*, 18(7), [1183-1193](https://doi.org/10.1007/s40999-018-0364-2).

- **Dabiri, H.**, Kaviany, A. and Kheyroddin, A. (2014), *Axial Force-Moment Interaction Diagrams to Calculate Shear Wall Reinforcement*. International Journal of Trends in Life Sciences, Volume 3, Special Issue 3, [561-570](#).

International Conference Papers

- **Dabiri, H.**, Dall'Asta, A., Tondi, E., Morici, M., (2019), *Evolution of structural capacity in the case of time-dependent point source*, GNGNTS 2019, 12-14 November, Rome, Italy.
- **Dabiri, H.**, Dall'Asta, A., Tondi, E., Morici, M., (2019), *Preliminary study on the impact of time-dependent seismic hazard on design capacity*, XVIII ANIDIS congress, 15-19 September, Ascoli Piceno, Italy.
- **Dabiri, H.** and Kheyroddin, A., (2017), *Effect of Replacing Concrete with Elastomeric Pad on Seismic Behavior of Circular RC Bridge Pier*, 2th International conference on Civil engineering, Architecture and Crisis management, 7 July, Tehran, Iran.
- **Dabiri, H.**, Kaviany, A. and Kheyroddin, A., (2015), *Comparison of the Weight of Reinforcement Bars in RC Structures According to ACI, CSA And EURO Codes Considering the Ductility Effect*, International Conference on Human, Architecture, Civil Engineering and City, 15 June, Tabriz, Iran.
- Ghasem zade, A., Talai Taba, B., Kaviany, A. and **Dabiri, H.**, (2015), *Investigation of RC Shear Wall Dimensions and Arrangement on the RC Structure Seismic Behavior*, International Conference on Engineering Sciences, Art and Law, 14-15 April, Barcelona, Spain.
- Kaviany, A., **Dabiri, H.** and Kheyroddin, A., (2015), *The Effect Of Ductility on the Weight of Designed Reinforcement Bars in RC Beam Element According To ACI 318-05, CSA A23,3-04 And Euro Code 8: BS EN1988-1:2004*, International Conference on Engineering Sciences, Art and Law, 14-15 April, Barcelona, Spain.
- Sharbatdar, M.K., **Dabiri, H.**, Kaviany, A. and Baghdadi, M., (2013), *The Effect of Using Glass Particles as Replacements for Sand on Compressive Strength of Concrete*, International Conference on Concrete and Development, 29 April-1 May, Tehran, Iran.

Awards

- Ranked first (achieving 20 out of 20) for the annual scholarship for PhD at University of Camerino, Camerino, Italy, Nov. 2018.
- Awarded for excellence in reviewing at Civil Engineering Journal (C. E. J.), May 2015
- Stood among the 17% of graduate students at Semnan University, Iran for the master of science, structural engineering, 2014
- Stood among the top 2% in "National Universities Entrance Exam", 2006

Paper Reviews

- Elsevier (Construction and building materials, Engineering Structures)
- Springer (Archives of Civil and Mechanical Engineering, KSDE, Asian Journal of Civil Engineering)
- Wiley (Structural Concrete)
- Techno-Press (Steel and Composite Structures)
- MDPI (Crystals, Materials, Buildings)
- Civil Engineering Journal
- Civil Engineering Infrastructures Journal, University of Tehran
- International journal of Rehabilitation in Civil Engineering, Semnan University

Membership

- Member of the American Society of Civil Engineering (ASCE)
- Member of the Iranian Concrete Institute (ICI)
- Premium Member of Iranian Earthquake Engineering Association (IEEA)
- Member of the Construction Engineering Organization, Alborz Province

Software Applications and skills

- Collaborating with members of research teams for drafting grant applications
- Engineering software:
 - ✓ Proficient in: SAP2000, ETABS, SAFE, AUTOCAD, ARCHICAD, ABAQUS, SURFER, MATHCAD.
 - ✓ Familiar with: OpenSees, ANSYS, Tekla Structures.
- Programming: MATLAB, PYTHON.
- Machine learning: regression-based methods, ANN, Random Forest, KNN, Decision Tree, Support Vector Machine, EPR.

Languages

- Competent in English (IELTS score, 2017: **Overall:6.5**; Listening:7.5, Speaking:6.5, Reading:6, Writing: 6)
- Fluently bilingual in Farsi

References

- **Prof. Ali Kheyroddin**, Professor of Structural Engineering, Faculty of Civil Engineering, Semnan University & Visiting Scholar in the University of Texas at Arlington
Email address: Kheyroddin@semnan.ac.ir Ali.kheyroddin@uta.edu
- **Prof. Mahdi Kioumarsj**, Associate Professor of Structural Engineering, Department of Civil Engineering and Energy Technology, OsloMet–Oslo Metropolitan University, 0166 Oslo, Norway
Email address: mahdi.kioumarsj@oslomet.no
- **Prof. Andrea Dall'Asta**, School of Architecture and Design (SAAD), University of Camerino, Viale della Rimembranza 9, 63100, Ascoli Piceno, Italy
Email address: andrea.dallasta@unicam.it

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