

Curriculum vitae of ALIREZA PACHENARI

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Education:

2007 B.S. Civil Engineering, Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran

2009 M.S. Structural Engineering, Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran, Prof. Keramati, Advisor

(GPA: 19.75/20, PhD Thesis: Excellent Grade)

MS Thesis: Progressive Collapse in Reinforced Concrete Structures with Moment Resisting Frames

2014 Ph.D. Structural Engineering, Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran, Prof. Keramati, Advisor

(GPA: 19/20, PhD Thesis: Excellent Grade)

PhD Thesis: Progressive Collapse in RC buildings by successive removal of columns and their effect on collapse of the structure

Honors & Awards:

2003-2007 High Honor and Top-Rank in B. S Degree

2007 Offered M.Sc. in structural Engineering major without passing the entrance exam

2009 High Honor and Top-Rank in M. S Degree

2009 received Best-Master Thesis of the year award in structural (and earthquake) engineering, Tehran Polytechnic

2010-2012 National Elites Foundation Facilities for Military Service Period

2018 Distinguished Teacher Award of the Faculty of Engineering (2018), University of Kashan

Research Interests:

Compressive Arch action in RC members

Failure mechanisms of slab structures

Progressive collapse

Nonlinear analysis of structures

Conductive concretes

Recycled aggregate concretes

Settlement of structures

Peer reviewed journal papers:

1. Towards new generation of electrode-free conductive cement composites utilizing nano carbon black, *Construction and Building Materials*, 2022.
2. An analytical model on compressive arch action capacity of 3D beam-column sub-assemblages under failure of one or two adjacent interior columns, *Engineering Failure Analysis*, 2020.
3. Analytical study of flat slab collapse mechanisms due to overloading in a cluster of exterior panels, *KSCE Journal of Civil Engineering*, 2019.
4. Numerical Study on the Behavior and Bearing Mechanism of Flat Slabs in Column Loss Events, *Advances in Civil Engineering*, 2021.
5. Resistance of Recycled Aggregate Concrete (RAC) Subjected to Drying-Wetting Cycles to Attack of Magnesium and Sodium Sulfates. *Journal of Engineering*, 2020.
6. Stress distribution and failures in partially overloaded support-removed flat slab floors, *International Journal of Numerical Methods in Civil Engineering*, 2018.
7. Progressive collapsed zone extent estimation in two-way slab floors by yield line analysis, *Magazine of Concrete Research*, 2014.
8. Investigation of progressive collapse in intermediate RC frame structures, *The Structural Design of Tall and Special Buildings*, 2013.
9. A Method for Modeling Successive Removal of Columns in Macromodeling Frameworks, *Structural Engineering International*, 2014.
10. Influence of increasing differential settlement under columns on a RC frame response considering different support conditions, *Journal of Structural and Construction Engineering*, 2018.
11. Load redistribution pattern in a RC moment frame due to excavation-induced 3D ground surface settlement profiles, *Journal of Structural and Construction Engineering*, 2021.
12. Form Optimization of Truss Columns with Inspiration from the Helix Bone Structure, *Journal of Iranian Architecture & Urbanism*, 2019.

Selected conference papers:

Evaluation of progressive collapse potential in a steel frame, *8th International Congress on Civil Engineering (ICCE)*, Shiraz, Iran, 2009.

Assessment of a RC frame response to differential settlements in various column locations, *10th National Congress on Civil Engineering*, Tehran, Iran, 2017.

Effect of Geometric Form and Curvature of Dome Shells on Structural Performance, *International Conference on Architecture and Mathematics, Kashan, Iran, 2017*.

Progressive collapse assessment of structural frames due to successive removal of two columns using subsequent analyses – part 1: Theory, *10th International Congress on Civil Engineering (ICCE)*, Tabriz, Iran, 2015.

Nonlinear dynamic analysis using one-dimensional subspace, *10th International Congress on Civil Engineering (ICCE)*, Tabriz, Iran, 2015.

Comparison between concrete moment frames designed with direct displacement-based and force-based design methods-Part 1: Theory and Design, *3rd International conference on structural engineering*, Tehran, Iran, 2017.

Comparison between concrete moment frames designed with direct displacement-based and force-based design methods-Part 2: Performance comparison, *3rd International conference on structural engineering*, Tehran, Iran, 2017.

Influence of non-concurrency in removal of non-adjacent columns on progressive collapse potential of a RC frame via subsequent nonlinear analyses, *3rd International congress on civil engineering, architecture and urban development*, Tehran, Iran, 2015.

Books

- 2018 TECHNICAL ENGLISH FOR CIVIL AND ENVIRONMENTAL ENGINEERING: reading comprehension, writing style, research software, and about 700 words you should learn, Publisher: DanshAmooz (for Persian students)

Participation in Codification of National Standards

- 2012 Guide of The ninth chapter of national building cod-Ver.1390

Professional and executive positions:

2007-2010	Participation in structural design Team for Mashhad city hall, Mashhad Shohada square project (Tajeer Consulting Engineers)
2009-2021	Participation and consultation in structural design of some private construction projects
2010-Now	Tehran Construction Engineering organization
2011-2016	lecturer, Department of Civil Engineering, University of Kashan
2016-Now	Assistant Professor, Department of Civil Engineering, University of Kashan
2023-Now	Official Expert Organization

Teaching Experience

2012-Now	Steel Structures (1), Department of Civil Engineering, University of Kashan
2013-Now	Steel Structures (2), Department of Civil Engineering, University of Kashan
2013-Now	Steel Structures project, Department of Civil Engineering, University of Kashan
2016-2020	Estimation & cost & project, Department of Civil Engineering, University of Kashan
2013-Now	Strength of Materials 2, Department of Civil Engineering, University of Kashan
2013-Now	Dynamics, Department of Civil Engineering, University of Kashan
2013-2014	Foundation Engineering, Department of Civil Engineering, University of Kashan
2017-Now	Construction Material & Lab, Department of Civil Engineering, University of Kashan
2012-2017	Loading, Department of Civil Engineering, University of Kashan
2017-Now	National Building Regulations, Department of Civil Engineering, University of Kashan
2014-Now	Inelastic Analysis of structures, Department of Civil Engineering, University of Kashan
2014-Now	Advanced concrete structures, Department of Civil Engineering, University of Kashan

Technical Reviewer

Journal of building engineering (Elsevier)

The structural design of tall and special buildings (Wiley)

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Computer Skills

Structural engineering/Finite element Software

ABAQUS

OPENSEES

SAP

ETABS

SAFE

General

Mathematica

Matlab (m-file)

Autocad