Soheil Mohammadi

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Academic degrees:

- **Ph.D.**: Civil Engineering (Computational Mechanics), University of Wales Swansea, UK, 1998.
- **M.Sc.**: Civil Engineering (Structures), University of Tehran, IRAN, 1992.
- **B.Sc.** : Civil Engineering, University of Tehran, IRAN, 1989.

Research interests:

- Multiscale/Multiphysics analysis
- Biomechanics
- Nano and micro mechanics
- Extended finite element method (XFEM)
- Meshless methods
- Artificial Intelligence in Computational Mechanics
- Advanced polymers and alloys, metamaterials and smart materials
- Plasticity, damage and fracture mechanics

PhD/MSc courses:

- Multiscale Methods
- Meshless Methods
- Fracture Mechanics
- Contact Mechanics

Books:

- Multiscale Biomechanics
  S. Mohammadi
  Wiley, United Kingdom, 2023.
- XFEM Fracture Analysis of Composites
  S. Mohammadi
  Wiley, United Kingdom, 2012.
- Extended Finite Element Method
  S. Mohammadi
  Wiley/Blackwell Publishers, United Kingdom, 2008.
- Discontinuum Mechanics using Finite and Discrete Elements
  S. Mohammadi
  WIT Press, United Kingdom, 2003.

Refereed journal papers:

- Enhancing non-metal gasket performance with shape memory fibers
  A. Ardali, J. Rouzegar, S. Mohammadi, S. Sharifnejad
  International Journal of Pressure Vessels and Piping, (2024) Accepted for publication.
- Finite element solution of coupled multiphysics reaction-diffusion equations for fracture healing in hard biological
  M. Zamani, S. Mohammadi
  Computers in Biology and Medicine, **179** (2024) 108829.
- Nonlinear finite element modelling of the bond behaviour of near-surface mounted Fe-SMA bars
  N. Khodkari, S. Reza, B. Schranz, Y.E. Harmanci, S. Mohammadi, M. Motavalli, M. Shahverdi
  Structures, **66** (2024) 106836.
- Meshless method for wave propagation in poroelastic transversely isotropic half-space with the use of perfectly matched layer
  K. Shaker, M. Eskandari-Ghadi, S. Mohammadi
  International Journal for Numerical and Analytical Methods in Geomechanics, Accepted for publication (2024).
- Self-centering of steel braced frames using the shape memory property of FE-SMA TADAS dampers
  A. Torabizadeh, A. Foyouzat, A. Asghari, S. Mohammadi
  Smart Materials and Structures, **33**, No. 6 (2024) 065025 (12pp).
- A review of concurrent multiscale methods for analysis of fine scale discontinuity problems
  O. Alizadeh, S. Mohammadi
  Journal of Computational Methods in Engineering, **42**, 2 (2024) 1-49 (In Persian).
- DEM-XFEM study of particle shape effect on particle breakable of granular materials
  S.M. Seyyedan, A.A. Mirghasemi, S. Mohammadi
  Geotechical and Geological Engineering, **41**, 5 (2023), 3115-3137.
- Transformation-Induced Plasticity in SMA Composites Experiencing Fiber Bridging Phenomenon
  A. Ardali, J. Rouzegar, S. Mohammadi, M. Karimi
  Materials Science and Engineering: A, **858** (2022), 144105.
- An atomistic entropy based finite element multiscale method for modeling amorphous materials
  H. Moslemzadeh, S. Mohammadi
  International Journal of Solids and Structures, **256** (2022) 111983.
- Evaluation of T-stress in stationary and propagating adiabatic cracks in FGMs subjected to thermo-mechanical loading
  H. Bayesteh, H. Khazal, S. Mohammadi
  Mechanics of Advanced Materials and Structures, **30**, 11 (2023) 2284-2303.
- 3D large strain hierarchical multiscale analysis of soft fiber-reinforced tissues: application to a degraded arterial wall
  S. Hatefi, P. Fatemi, H. Moslemzadeh, S. Mohammadi
  Engineering Computations, **39**,6 (2022) 2108-2143.
- Phase evolution based thermomechanical crack closure mechanism of shape memory polymers
  A. Foyouzat, H. Bayesteh, S. Mohammadi
  Mechanics of Materials **160** (2021) 103998.
- Numerical simulation of direct shear test on granular materials composed of breakable angular particles: A DEM-XFEM approach

S.M. Seyyedan, A.A. Mirghasemi, S. Mohammadi
Powder Technology, **391** (2021) 450-466.

- Deformation mechanics in inclined, brittle-ductile transpression zones: Insights from 3D finite element modelling
  S.T. Nabavi, S.A. Alavi, M. Diaz-azpiroz, S. Mohammadi, M.R. Ghassemi, C. Fernandez, L. Barcos, M. Frehner
  Journal of Structural Geology, **137** (2020) 104082.
- Wavelet-based iterative data enhancement for implementation in purification of modal frequency for extremely noisy ambient vibration tests in Shiraz-Iran
  H. Yousefi, A. Taghavi Kani, I.M. Kani, S. Mohammadi
  Frontiers of Strcuctural and Civil Engineering, **14** (2020) 446-472.
- A brittle to ductile phase transition fracture analysis of shape memory polymers
  A. Foyouzat, H. Bayesteh, S. Mohammadi
  Engineering Fracture Mechanics, **224** (2020) 106751.
- Delamination analysis in bimaterials consisting of shape memory alloy and elastoplastic layers
  S. Hatefi, H. Moslemzadeh, S. Mohammadi
  Composite Structures, **225** (2019) 111149.
- Micromechanical study of particle breakage in 2D angular rockfill media using combined DEM and XFEM
  J. Raisianzadeh, S. Mohammadi, A.A. Mirghasemi
  Granular Matter, (2019) 21-48.
- Multiscale polynomial-based high-order central high resolution schemes
  H. Yousefi, S. Mohammadi, T. Rabczuk
  Journal of Scientific Computing, **80,** No. 1 (2019) 555-613.
- An adapting cohesive approach for crack-healing analysis in SMA fibers-reinforced composites
  M. Karimi, H. Bayesteh, S. Mohammadi
  Computer Methods in Applied Mechanics and Engineering, **349** (2019) 550-575.
- Quasicontinuum multiscale modeling of the effect of rough surface on nanoindentation behavior
  H. Moslemzadeh, O. Alizadeh, S. Mohammadi
  Meccanica, **54** (2019) 411-427.
- Experimental and numerical investigation into the methods of determination of mode I static fracture toughness of rocks
  A.M. Pakdaman, M. Moosavi, S. Mohammadi
  Theoretical and Applied Fracture Mechanics, **100** (2019) 154-170.
- The variable node multiscale approach: coupling the atomistic and continuum scales
  O. Alizadeh, S. Mohammadi
  Computational Materials Science, **160** (2019) 256-274.
- XFEM fracture analysis of cracked pipeline with and without FRP composite repairs
  Z. Valadi, H. Bayesteh, S. Mohammadi
  Mechanics of Advanced Materials and Structures, **27**, Issue 22 (2020) 1888-1899 (published online 2018).
- 2D simulation of breakage angular particles using combined DEM and XFEM
  J. Raisianzadeh, A.A. Mirghasemi, S. Mohammadi
  Powder Technology, **336** (2018) 282-297
- Stable discontinuous space-time analysis of dynamic interface crack growth in orthotropic bi-materials using oscillatory crack tip enrichment functions
  A. Afshar, S. Hatefi, S. Mohammadi
  International Journal of Mechanical Sciences, **140** (2018) 557-580

- Mechanical evolution of transpression zones affected by fault interactions: insights from 3D elasto-plastic finite element models
  S.T. Nabavi, S.A. Alavi, S. Mohammadi, M.R. Ghassemi
  Journal of Structural Geology, **160** (2018) 19-40
- A hierarchical nano to macro multiscale analysis of monotonic behavior of concrete columns made of CNT-reinforced cement composite
  M. Eftekhari, S. Mohammadi, M. Khanmohammadi
  Construction and Building Materials, **175** (2018) 134-143
- Maximum Entropy Based Finite Element Analysis of Porous Media
  E. Norouzi, H. Moslemzadeh, S. Mohammadi
  Frontiers of Structural and Civil Engineering, **13**, No.2, (2019) 364-379.
- An extended finite element framework for vibration analysis of cracked FGM shells
  A. Nasirmanesh, S. Mohammadi
  Composite Structures, **180** (2017) 298-315
- Micro-based enriched multiscale homogenization method for analysis of heterogeneous materials
  H. Bayesteh, S. Mohammadi
  International Journal of Solids and Structures, **125** (2017) 22-42
- 3D hierarchical multiscale analysis of heterogeneous SMA Based Materials
  P. Fatemi, S. Hatefi, H. Bayesteh, S. Mohammadi
  International Journal of Solids and Structures, **118-119** (2017) 24-40
- A finite strain integral-type anisotropic damage model for fiber-reinforced materials: Application in soft biological tissues
  F. Fathi, S. Hatefi, P. Fatemi, S. Mohammadi
  Computer Methods in Applied Mechanics and Engineering, **332** (2017) 262-295
- Analysis of transpression within contractional fault steps using finite-element method
  S.T. Nabavi, S.A. Alavi, S. Mohammadi, M.R. Ghassemi
  Journal of Structural Jeology, **96** (2017) 1-20
- Experimental and numerical investigation of rock dynamic fracture
  A. Mirmohammadlou, H. Memarian, S. Mohammadi, M. Jafari
  International Journal of Mining & Geo-Engineering, **51-1** (2017) 37-46
- Eigenvalue buckling analysis of cracked functionally graded cylindrical shells in the framework of the extended finite element method
  A. Nasirmanesh, S. Mohammadi
  Composite Structures, **159** (2016) 548-566
- An efficient computational model for dislocation-precipitate interaction
  A. Keyhani, R. Roumina, S. Mohammadi
  Computational Materials Science, **122** (2016) 281-287
- Transient analysis of stationary interface cracks in orthotropic bi-materials using oscillatory crack tip enrichments and the interaction integral method
  A. Afshar, S. Hatefi, S. Mohammadi
  Composite Structures, **142** (2016) 200-214
- Molecular dynamics simulation of the nonlinear behavior of the CNT-reinforced calcium silicate hydrate (C-S-H) composite
  M. Eftekhari, S. Mohammadi
  Composites Part A, **82** (2016) 78-87
- Numerical study of thermo-mechanical coupling effects on crack tip fields of mixed-mode fracture in pseudoelastic shape memory alloys
  S. Hatefi Ardakani, A. Afshar, S. Mohammadi
  International Journal of Solids and Structures, **81** (2016) 160-178
- Numerical analysis of crack tip fields in interface fracture of SMA/elastic bi-materials
  A. Afshar, S. Hatefi Ardakani, S. Hashemi, S. Mohammadi

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- Nanoindentaion simulation of coated aluminum thin film using quasicontinuum method
  O. Alizadeh, G. Tolooei, S. Mohammadi
  Computational Materials Science, **111** (2016) 12-22
- Multiscale dynamic fracture behavior of the carbon nanotube reinforced concrete under impact loading
  M. Eftekhari, S. Mohammadi
  International Journal of Impact Engineering, **87** (2016) 55-64
- An extended element free Galerkin method for fracture analysis of anisotropic functionally graded materials
  H. Khazal, H. Bayesteh, S. Mohammadi, S. Ghorashi, A. Ameen
  Mechanics of Advanced Materials and Structures, **23,** No. 5 (2016) 513-528
- An extended thermo-mechanically coupled algorithm for simulation of superelasticity and shape memory effect in shape memory alloys
  S.S. Hashemi Yazdi, H. Ahmadian, S. Mohammadi
  Frontiers of Structural and Civil Engineering, **9**, 4 (2015) 466-477
- Dynamic adaptive finite element analysis of acoustic wave propagation due to underwater explosion for fluid-structure interaction problems
  S.S. Emamzadeh, M.T. Ahmadi, S. Mohammadi, M. Biglarkhani
  Journal of Marine and Structural Applications, **14**, No. 3 (2015) 302-315
- XFEM buckling analysis of cracked composite plates
  A. Nasirmanesh, S. Mohammadi
  Composite Structures, **131** (2015) 333-343
- XFEM-dislocation dynamics multi-scale modeling of plasticity and fracture
  A. Keyhani, M. Goudarzi, S. Mohammadi, R. Roumina
  Computationals Materials Science, **104** (2015) 98-107
- Numerical analysis of rock fracturing by gas pressure using the extended finite element method
  M. Goodarzi, S. Mohammadi, A. Jafari
  Petroleum Science, **12** (2015) 304-315
- Strain-rate sensitivity of unstable localized phase transformation phenomenon in shape memory alloys using a non-local model
  H. Ahmadian, S. Hatefi, S. Mohammadi
  International Journal of Solids and Structures, **63** (2015) 167-183
- Thermo-mechanically coupled fracture analysis of shape memory alloys using the extended finite element method
  S. Hatefi Ardakani, H. Ahmadian, S. Mohammadi
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- XFEM analysis of fiber bridging in mixed-mode crack propagation in composites
  A. Afshar, A. Daneshyar, S. Mohammadi
  Composite Structures, **125** (2015) 314-327
- Thermo-mechanical fracture study of inhomogeneous cracked solids by the extended isogeometric analysis method
  H. Bayesteh, A. Afshar, S. Mohammadi
  European Journal of Mechanics – A, **51** (2015) 123-139
- Finite strain fracture analysis using the extended finite element method with new set of enrichment functions
  R. Rashetnia, S. Mohammadi
  International Journal for Numerical Methods in Engineering, **102** (2015) 1316-1351
- Analysis of cohesive cracking in saturated porous media using an extrinsically enriched EFG method
  M. Goudarzi, S. Mohammadi

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- T-spline based XIGA for Fracture Analysis of Orthotropic Media
  S.SH. Ghorashi, N. Valizadeh, S. Mohammadi, T. Rabczuk
  Computers and Structures, **147**(2015) 138-146.
- Coupled thermo-mechanical analysis of shape memory effects (in Persian)
  S. Hashemi, S. Mohammadi
  Journal of Computational Methods in Engineering (Isfahan University of Technology), 2015
- Mixed mode fracture analysis of adiabatic cracks in homogeneous and non-homogeneous materials in the framework of partition of unity and the path-independent interaction integral
  E. Goli, H. Bayesteh, S. Mohammadi
  Engineering Fracture Mechanics, **131** (2014) 100-127
- Analytical solution for stress field and intensity factor in CSTDB under mixed mode conditions
  N.A. Ghavidel, H. Memarian, S. Mohammadi, M. Heydarzadeh
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- Weak discontinuity in porous media: An enriched EFG method for fully coupled layered porous media
  M. Goudarzi, S. Mohammadi
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- Effect of defects on the local shell buckling and post-buckling behavior of single and multi-walled carbon nanotubes
  M. Eftekhari, S. Mohammadi, A.R. Khoi
  Computational Materials Science, **79** (2013) 736-744.
- A local PUFEM modeling of stress singularity in sliding contact with minimal enrichment for direct evaluation of generalized stress intensity factors
  S.H. Ebrahimi, S. Mohammadi, I.Mahmoudzadeh Kani
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- Strong tangential discontinuity modeling of shear bands using the extended finite element method
  A. Daneshyar, S. Mohammadi
  Computational Mechanics, **52** (2013) 1023-1038.
- Thermo-mechanical XFEM crack propagation analysis of functionally graded materials
  S.S. Hosseini, H. Bayesteh, S. Mohammadi
  Materials Science and Engineering, A **561** (2013) 285-302.
- XFEM fracture analysis of orthotropic functionally graded materials
  H. Bayesteh, S. Mohammadi
  Journal of Composites: Part B, **44** (2013) 8-25.
- Analysis of thin plates by a combination of isogeometric analysis and the Lagrange multiplier approach
  N. Valizadeh, S.Sh. Ghorashi, S. Mohammadi, S. Shojaee, H.Ghasemzadeh
  Computational Methods in Civil Engineering, **33** (2012) Issue 2, 47-66.
- How particle shape affects the flow through granular materials
  A. Nemati Hayati, M.M. Ahmadi, S. Mohammadi
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- Fracture analysis of composites by time independent moving-crack orthotropic XFEM

D. Motamedi, S. Mohammadi
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- A two-mesh coupled gas flow-solid interaction model for blast analysis in fractured media
S. Mohammadi, A. Pooladi
Finite Elements in Analysis and Design, **50** (2012) 48–69
- Extended isogeometric analysis (XIGA) for analysis of stationary and propagating crack
S.S. Ghorashi, N. Valizadeh, S. Mohammadi
International Journal for Numerical Methods in Engineering, **89**, 9 (2012) 1069-1101.
- Fracture analysis of FRP reinforced beams by orthotropic XFEM
S. Esnaashari, S. Mohammadi
Journal of Composite Materials – Part B, **46** (2012) 1367-1389.
- A stabilized particle method for large deformation dynamic analysis of structures
H. Ostad, S. Mohammadi
International Journal of Structural Stability and Dynamics, **12**, 4 (2012) 1250026 (28 pages).
- Effect of batter piles on static behavior of pile groups
A. Bagherzadeh, A.A. Mirghasemi S. Mohammadi
Journal of University College of Engineering (University of Tehran), 2012, **45**(3) 291-300. (in Persian)
- Effect of batter piles on static behavior of pile groups
H. Omidali, S. Mohammadi, A. Fakher
Journal of University College of Engineering (University of Tehran), 2012, **45**(3) 279-290. (in Persian)
- Analytical solution for isothermal flow in a shock tube containing rigid granular material
A. Nemati Hayati, M.M. Ahmadi, S. Mohammadi
Transport in Porous Media, **93**, (2012) 13-27.
- XFEM fracture analysis of shells: The effect of crack tip enrichments
H. Bayesteh, S. Mohammadi
Computational Material Science, **50** (2011) 2793-2813.
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S.S. Ghorashi, S. Mohammadi, S-R. Sabbagh-Yazdi
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- Delamination analysis of composites by new orthotropic bimaterial extended finite element method
S. Esnaashari, S. Mohammadi
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- Analytical derivation of tortuosity and permeability of mono-sized spheres: a volume averaging approach
M.M. Ahmadi, S. Mohammadi, A. Nemati Hayati
Physical Review E **83**, 026312 (2011)
- Plane-strain discrete dislocation plasticity incorporating anisotropic elasticity
S.S. Shishvan S. Mohammadi, M. Rahimian, E. Van der Giessen
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H. Ostad, S. Mohammadi
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D. Motamedi, S. Mohammadi
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- Numerical simulation of particle breakage of sharp-edge particles using combined DEM and FEM

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- Meshless equilibrium on line method (MELM) for linear elasticity
  A. Sadeghirad, S. Mohammadi, I.M. Kani
  Structural Engineering and Mechanics, **35**, 4 (2010).
- Large deflection analysis of flexible plates by the finite point method
  M. Bitaraf, S. Mohammadi
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  D. Motamedi, S. Mohammadi
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  S.S. Ghorashi, S-R. Sabbagh-Yazdi, S. Mohammadi
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  S. Forouzan-sepehr, S. Mohammadi
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  H. Shahmohammadi, S. Mohammadi
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  S.A.R. Beyabanaki, R. Geraili Mikola, O.R. Biabanaki, S. Mohammadi
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- Analysis of shock wave reflection from fixed and moving boundaries using a stabilized particle method
  H. Ostad, S. Mohammadi
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- Validation of dynamic block displacement analysis and modification of edge-to-edge contact constraints in 3-D DDA
  S.A.R. Beyabanaki, B. Ferdosi, S. Mohammadi
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- A dislocation dynamics based derivation of the Frank-Read sources characteristics for discrete dislocation plasticity
  S. Soleimani, S. Mohammadi, M. Rahimian
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- Micromechanics of breakage in sharp-edge particles using combined DEM and FEM
  A. Bagherzadeh, A.A. Mirghasemi, S. Mohammadi
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- An extended finite element (XFEM) approach for crack analysis in composite media
  S.H. Ebrahimi, S. Mohammadi, A. Assadpoure
  International Journal of Civil Engineering, **3**, 198-207, 2008.
- A field smoothing stabilization of particle methods in elastodynamics
  H. Ostad-Hossein, S. Mohammadi
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- Analysis of chloride diffusion in concrete structures for prediction of initiation time of corrosion using a new meshless approach
  M. Bitaraf, S. Mohammadi
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- Analysis of fractured rock and gas flow interaction in explosion simulations
  S. Mohammadi, A. Bebamzadeh
  Combustion, Explosion and Shock Waves, **43**(4): 482-491, 2007.
- 3D multi delamination/fracture analysis of composites subjected to impact loadings
  S. Mohammadi, A.A. Moosavi
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- Non uniform isentropic gas flow analysis of explosion in fractured solid media
  S. Mohammadi, A. Pooladi
  Finite Elements in Analysis and Design, **43**: 478-493, 2007.
- Developing new enrichment functions for crack simulation in orthotropic media by the extended finite element method
  A. Asadpoure, S. Mohammadi
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- Equilibrium on the line method (ELM) for imposition of Neumann boundary conditions in the finite point method (FPM)
  A. Sadeghirad, S. Mohammadi
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  A. Asadpoure, S. Mohammadi, A. Vafai
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  K. Ghabraei, S. Mohammadi
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  S. Mohammadi, M.R. Aram, A. Mahootchian
  Journal of University College of Engineering (University of Tehran), **39**(3), 375-388, 2005. (in Persian)
- Dynamic delamination analysis of composite shells
  S. Forouzan-sepehr, S. Mohammadi
  Journal of University College of Engineering (University of Tehran), **39**(3), 389-401, 2005. (in Persian)
- Hourglass stabilization of the pentahedral solid element

S. Mohammadi, D.R.J. Owen, D. Peric
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  S. Mohammadi, S. Forouzan-sepehr,
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- Performance of the anisotropic Morley shell element in dynamic large deformation analysis
  S. Mohammadi, D.R.J. Owen, D. Peric
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- A combined finite/discrete element algorithm for delamination analysis of composites
  S. Mohammadi, D.R.J. Owen, D. Peric
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- Nonlinear dynamic analysis of reinforced concrete shells
  I.M. Kani, S. Mohammadi
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  I.M. Kani, S. Nasiraei, S. Mohammadi
  Journal of University College of Engineering (University of Tehran), **58**, 11-21, 1997. (in Persian)

Under review international journal papers:

- A PML based family of stretched coordinate system for weave propagation in poroelastic transversely isotropic half-space
  M. Eskandari-Ghadi, K. Shaker, S. Mohammadi

- Biaxial simulation of breakable particles under undrained conditions using a combined DEM and XFEM approach
  A. Alipour Eskandani, A.A. Mirghasemi. S. Mohammadi, J. Raisianzadeh

Conference papers:

- Viscoelastic response of brain tissue in quasi-static loadings
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Supervised sabaticals

- Meshfree methods for simulation of fluid-structure interactions
  S.R.S. Yazdi (KNT Universitay of Technology)
  University of Tehran, 2015

Supervised postdocs

- Modelling of high-frequency wave propagation in fluid-solid interaction problems
  H. Bayesteh
  University of Tehran, 2019-2020
- Numerical simulation of explosive loadings on structures
  B. Amirrasouli
  Universityof Tehran, 2017-1018
- XEFG analysis of cracking in FGM plates
  H. Khazal
  University of Tehran, 2016
- Meshfree analysis of porous media
  M.A. Iranmanesh
  University of Tehran, 2015.

Supervised PhD theses:

- Experimental and numerical investigation of the influence of roughness on mechanical behavior of rock joints based on 2D profiles with the improvement of Barton's roughness profile
  A.M. Pakdaman (supervised by M. Moosavi, S. Mohammadi)
  University of Tehran, 2023 (In Persian)
- An entropy based multiscale method for simulation of amorphous materials
  H. Moslemzadeh
  University of Tehran, 2022 (In Persian)
- Enriched multiscale method
  O. Alizadeh
  University of Tehran, 2019 (In Persian)
- Modelling of transpression zones using finite element method
  S.T. Nabavi (supervised by S.A. Alavi, S. Mohammadi, M.R. Ghassemi)
  Shahid Beheshti University, 2019 (In Persian)
- 2D simulation of breakage of particles by combined DEM and XFEM
  J. Raisianzadeh (supervised by A.A. Mirghasemi, S. Mohammadi)
  University of Tehran, 2018 (In Persian)
- Multiscale damage analysis of heterogeneous media
  H. Bayesteh
  University of Tehran, 2018 (In Persian)
- Physical and numerical investigation of buried pipe response subjected to permanent ground deformations-faulting
  R. Yeganeh (supervised by M. Moradi, A. Ghalandarzadeh, S. Mohammadi)
  University of Tehran, 2017
- Application of multiscale method for analysis of cyclic behavior of concrete structures reinforced by defected carbon nanotubes
  M. Eftekhari (supervised by S. Mohammadi, A.R. Khoei)
  Islamic Azad University, 2015 (In Persian)
- Developing an extended finite element methodology for general frictional contact problems
  S.H. Ebrahimi (supervised by S. Mohammadi, I.M. Kani)
  University of Tehran, 2014 (In Persian)
- Theoretical and numerical analysis of shock waves in porous media
  A. Nemati hayati (Supervised by M. Ahmadi)
  Sharif University of Technology, 2013 (In Persian)
- Fracture analysis of FGM composites by enriched element free Galerkin method (EFG)
  H. Khazal (Supervised by A.A. Nassar)
  Basreh University, Iraq, 2013
- Simulation of free surface fluid flow within a saturated porous medium by the smoothed particle hydrodynamics (SPH) method
  H. Akbari (Supervised by M. Montazeri)
  University of Tehran, 2013 (In Persian)
- Dislocation dynamics analysis of plastic behaviour of materials with emphasis on the role of dislocation sources
  S. Soleimani Shishvan (Supervised by S. Mohammadi, M. Rahimian)
  University of Tehran, 2010 (In Persian).
- Numerical simulation of fracture in rock fill aggregates by combined DEM and FEM
  A. Bagherzadeh (Supervised by A.A. Mirghasemi)
  University of Tehran, 2008 (In Persian).

- Application of hybrid state space for material and geometric nonlinear analysis of steel frames
  K. Gildashti (Supervised by A.A. Mirghaderi)
  University of Tehran, 2008 (In Persian).
- A new residual based approach for meshless methods
  A. Sadeghirad (Supervised by I.M. Kani)
  University of Tehran, 2008 (In Persian).
- Gas-solid interaction by the meshless smoothed particle hydrodynamics
  H. Ostadhossein
  University of Tehran, 2007 (In Persian).
- A new analytical model for wave run-up on inclined surfaces
  F. Rad (Supervised by: S. Mohammadi, M. Dolatshahi)
  University of Tehran, 2006 (In Persian).

Supervised MSc theses

- Vibration analysis of damaged soft tissues
  A.H. Abbasi
  University of Tehran, 2024 (In Persian)
- Experimental and numerical investigation of the effect of steel fibers on the behavior of 3D printed concrete
  S.S. Zare Alhoseini (supervised by S. Mohammadi, M. Shahverdi, A.M. Ramezanianpour, A. Sadeghi)
  University of Tehran, 2023 (In Persian)
- Numerical simulation of fracture healing process in hard biological tissues
  M. Zamani
  University of Tehran, 2022 (In Persian)
- Multiscale modelling of traumatic brain injury subjected to quasi-static loading
  S. Zolghadr
  University of Tehran, 2022 (In Persian)
- Numerical simulation of self-healing cracked asphalt using the extended finite element method
  Z. Samet (supervised by S. Mohammadi, S.M.Z. Alavi)
  University of Tehran, 2021 (In Persian)
- Nonlinear numerical analysis of bond behavior of near-surface mounting strengthening of reinforced beams with iron-based shape memory
  N. Khodkari (supervised by M. Shahverdi, M. Motavalli, S. Mohammadi, B. Schranz)
  University of Tehran, 2021 (In Persian)
- Large deformation and contact analysis of an interacting SMA stent and potentially damaged soft tissues
  H. Momen Heravi (supervised by S. Mohammadi, M. Mohajery)
  University of Tehran, 2021 (In Persian)
- Simulation of crack healing and strengthening in SMA-reinforced concrete specimen
  Torabizadeh (supervised by H. Yousefi, S. Mohammadi, M. Shahverdi)
  University of Tehran, 2021 (In Persian)
- A novel method for fatigue assessment of shear connectors in partially-composite steel-concrete beams based on machine-learning
  S. Tatlari (supervised by A.R. Ghiami Azad, M. Shahverdi, S. Mohammadi)
  University of Tehran, 2021 (In Persian)
- Two-dimensional simulation of breakage of angular particles in undrained condition using combined DEM and XFEM
  A.A. Alipour Askandani (supervised by A.A. Mirghasemi, S. Mohammadi)
  University of Tehran, 2021 (In Persian)
- Multiscale analysis of dynamic behavior of metamaterial in filtering acoustic waves
  M. Nasiri (supervised by S. Mohammadi, D. Miri, H. Yousefi)
  University of Tehran, 2020 (In Persian)
- Simulation of the healing process of damaged soft biomechanical systems
  K. Khaksar
  University of Tehran, 2020 (In Persian)
- Development of a concurrent multiscale simulation for heat transfer problems
  M. Khodadad
  University of Tehran, 2019 (In Persian)
- Multiscale simulation of phase transition phenomena in shape memory alloys
  S. Akhavan Abdollahian
  University of Tehran, 2019 (In Persian)
- Particle breakage modeling in direct shear test by using combined DEM and XFEM

S.M. Seyyedan (supervised by A.A. Mirghasemi, S. Mohammadi)
University of Tehran, 2019 (In Persian)

- Multiscale modelling of brain failure due to impulsive loading
  M. Janfada
  University of Tehran, 2018 (In Persian)
- Analysis of shape memory polymers (SMPs)
  A. Foyouzat
  University of Tehran, 2018 (In Persian)
- Crack-bridging analysis of SMA-reinforced media
  M. Karimi
  University of Tehran, 2018 (In Persian)
- Multiscale analysis of CNT-reinforced concretes
  A. Jafari
  University of Tehran, 2018 (In Persian)
- XFEM fracture analysis of FRP strengthened pressurized pipelines
  Z. Valadi
  University of Tehran, 2017 (In Persian)
- Numerical modeling of foundation settlement of offshore structures on hydrated seabed
  E. Noroozi (supervised by S. Mohammadi, A. Nakhaei)
  University of Tehran, 2017 (In Persian)
- Analysis of pressurized crack propagation d using the extended Finite Element Method (XFEM)
  V. Bagherpour (supervised by S. Mohammadi, A. Jafari)
  University of Tehran, 2016 (In Persian)
- A hybrid finite element-boundary element method for interaction of structure with a transversely isotropic medium
  A. Morshedifard (supervised by M. Eskandari Ghadi, S. Mohammadi)
  University of Tehran, 2016 (In Persian)
- XFEM fracture analysis of magneto-electro-static materials
  M.H. Vahabi
  University of Tehran, 2016 (In Persian)
- Debonding analysis in shape memory alloy composites
  S. Hashemi
  University of Tehran, 2016 (In Persian)
- Concurrent multiscale simulation of dislocation behavior in nanoindentation process of thin films
  G. Tolooei
  University of Tehran, 2015 (In Persian)
- Multiscale simulation of soft biomechanical tissues
  F. Fathi
  University of Tehran, 2015 (In Persian)
- Dynamic delamination analysis of orthotropic bimaterials
  A. Afshar
  University of Tehran, 2015 (In Persian)
- A partition of unity approach for simulation of singular frictional fractures
  S. SaeedMonir (supervised by V. Khansari, S. Mohammadi)
  Sharif University of Technology, 2015 (Persian)
- Analysis of cohesive crack propagation in porous media by the element free Galerkin method
  M. Goudarzi
  MSc Thesis, University of Tehran, 2014 (Persian)
- Dynamic fracture analysis of pipes subjected to internal blast loadings

M. Gomar
University of Tehran, 2014 (In Persian)

- Behaviour of a stiff layer on loose soil under footing
  R. Rashed (Supervised by A. Fakher, S. Mohammadi)
  University of Tehran, 2014 (In Persian)
- XFEM fracture analysis of shape memory alloys (SMAs)
  H. Ahmadian
  University of Tehran, 2013 (In Persian)
- Experimental evaluation of blast effects on pipelines by the geotechnical centrifuge setup
  H. Mahdipour (supervised by M. Moradi, A. Ghalandarzadeh, S. Mohammadi)
  MSc Thesis, University of Tehran, 2011
- Multiscale modeling of plasticity and fracture by means of dislocation dynamics
  A.R. Keyhani (supervised by S. Mohammadi, R. Roumina)
  University of Tehran, 2013 (In Persian)
- An XFEM model for transition of micro damage mechanics to macro crack analysis
  S. Hatefi (supervised by S. Mohammadi, I.M. Kani)
  University of Tehran, 2013 (In Persian)
- Numerical modeling of hydraulic fracture in concrete dams by the extended finite element method
  A. Mahdavi
  University of Tehran, 2013 (In Persian)
- Multiscale simulation of biomechanical systems
  S. Shahi
  University of Tehran, 2013 (In Persian)
- XFEM fracture analysis of plates in large deformation problems
  R. Rashetnia
  University of Tehran, 2013 (In Persian)
- Experimental and numerical investigation of rock dynamic fracture
  A.A. Mirmohammadlou (supervised by H. Memarian, S. Mohammadi)
  University of Tehran, 2013 (In Persian)
- Numerical investigation of scaling laws for analysis of structures subjected to blast loadings
  S.H. Sahebfosoul
  University of Tehran, 2013 (In Persian)
- Analysis of crack healing process in asphalt pavements by a visco-damage XFEM
  P. Hajikarimi (supervised by S. Mohammadi, S. Aflaki)
  University of Tehran, 2013 (In Persian)
- Numerical simulation of high pressure multiphase media by the meshless CSPM method
  S.A. Madani
  University of Tehran, 2010 (In Persian)
- Numerical evaluation of residual strength of strengthened reinforced concrete columns
  T. Momeni (supervised by A. Hosseini, S. Mohammadi)
  University of Tehran, 2012 (In Persian)
- Application of XFEM for simulation of fault sliding
  M. Parchei Esfahani (Supervised by S. Mohammadi, H. Zaferani)
  University of Tehran, 2012 (In Persian)
- SPH simulation of dam breaks
  H. Jebeli Aghdam (Supervised by M. Montazeri, S. Mohammadi)
  University of Tehran, 2012 (In Persian)
- XFEM modelling of shear band propagation
  A. Daneshyar
  University of Tehran, 2012 (In Persian)

- Interaction of hydraulic and natural fractures in oil reservoirs by the extended finite element method
  R. Keshavarzi
  Azad University, 2011 (In Persian)
- Simulation of blast gas-fractured solid by XFEM
  M. Goodarzi (Supervised by A. Jafari, S. Mohammadi)
  University of Tehran, 2010 (In Persian)
- XFEM fracture analysis of pressurized pipes
  H. Bayesteh
  University of Tehran, 2011 (In Persian)
- An extended finite element method for dislocation dynamics in nano scale anisotropic material
  S. Malek Afzali
  University of Tehran, 2010 (In Persian)
- Development of an extended finite element method for simulation of space-time singularities
  S.N. Rezaei (Supervised by: S. Mohammadi, M. Dolatshahi)
  University of Tehran, 2010 (In Persian)
- Analysis of elastic-plastic cracks by the extended finite element method
  R. Rezakhani
  University of Tehran, 2010 (In Persian)
- XFEM analysis of wave propagation in cracked media
  M.M.R. Kabiri
  University of Tehran, 2010 (In Persian)
- Analysis of underwater explosion by the SPH method
  M.R. Afrasiabi
  University of Tehran, 2010 (In Persian)
- A new numerical XFEM model for delamination analysis of composites
  S. Esnaashari
  University of Tehran, 2010 (In Persian)
- Analysis of progressive damage of concrete structures subjected to non-nuclear surface blasts
  H. Abdolmaleki
  MA University, 2009 (In Persian)
- Coupled hydraulic fracture analysis by the extended finite element method
  H. Shafiei (Supervised by: M. Mousavi, S. Mohammadi)
  University of Tehran, 2009 (In Persian)
- Crack analysis in FGM composites by the extended finite element method
  S.N. Mahmoodi
  University of Tehran, 2009 (In Persian)
- Modified element free Galerkin method for orthotropic discontinuous problems
  S.S. Ghorashi (Supervised by: S.R.S. Yazdi)
  University of Science and Culture, 2009 (In Persian)
- Extended finite element method for dynamic analysis of composites
  D. Motamedi
  University of Tehran, 2008 (In Persian)
- Extension of the meshless finite point for discontinuous problems
  M. Shahverdi
  University of Tehran, 2008 (In Persian)
- Numerical modelling of blast wave propagation by SPH
  A. Jamshidzadeh (Supervised by: S. Mohammadi, N. Abdoli)
  University of Yazd, 2008 (In Persian)

- Experimental and numerical investigation of the impact resistance of high strength fiber concrete panels
  Y. Farnam (Supervised by: M. Shekarchizadeh, S. Mohammadi)
  University of Tehran, 2008 (In Persian)
- Analysis and multi-objective optimization of composite plates using the element free Galerkin method and the genetic algorithm
  A. Behshad (Supervised by: M.R. Ghasemi, S. Mohammadi)
  Sistan and Balouchestan University, 2008 (In Persian)
- Development of the extended finite element method for modelling discontinuity
  S.H. Ebrahimi
  University of Tehran, 2007 (In Persian)
- Meshless analysis of extrusion
  A. Faraji
  University of Tehran, 2007 (In Persian)
- Investigation of effect of batter piles within pile groups
  H. Omidali (Supervised by: S. Mohammadi, A. Fakher)
  University of Tehran, 2007 (In Persian)
- Analysis of underwater explosion on submerged structures
  H. Shahmohammadi
  University of Tehran, 2006 (In Persian)
- Numerical analysis of elastoplastic bars under dynamic loadings using MLPG
  H. Mirzakhanloo
  University of Yazd, 2005 (In Persian)
- Analysis of elasticity problems by the finite point method
  M. Bitaraf
  University of Tehran, 2005 (In Persian)
- Topology optimization of continuous plane systems
  K. Ghabraei
  University of Tehran, 2005 (In Persian)
- Analysis of explosion mechanism and gas-solid interaction
  A. Pooladi Heravi
  University of Tehran, 2005 (In Persian)
- Adaptive analysis of nonlinear dynamic systems
  A. Tavafoghi Jahromi
  University of Tehran, 2004 (In Persian)
- Numerical modelling of concrete beams strengthened by FRP composite plates
  A.A. Moosavi khandan
  University of Tehran, 2003 (In Persian)
- Interaction of gas-solid in a blast induced porous medium
  A. Behbamzadeh
  University of Tehran, 2003 (In Persian)
- Adaptive slope stability analysis by assuming shear bands
  M.A. Lak
  University of Tehran, 2002 (In Persian)
- Analysis of high velocity impact and penetration in brittle materials
  A. Mahootchian (Supervised by: S. Mohammadi, I.M. Kani)
  University of Tehran, 2002 (In Persian)
- 3D fracture analysis of composite materials
  S.M. Haghshenas
  University of Tehran, 2002 (In Persian)
- 2D analysis of progressive fracture in composite structures subjected to impact loadings
  R. Rahmani Amlashi

University of Tehran, 2001 (In Persian)

- Analysis of initiation and propagation of cracking and delamination in composite shells subjected to impact loadings
  A. Asadollahi
  University of Tehran, 2001 (In Persian)
- Stability and integrity analysis of masonry bridges and numerical simulation of their cracking and collapse
  H. Ostad-hossein
  University of Tehran, 2001 (In Persian)
- Dynamic progressive fracture analysis of structures by the combined finite/discrete element method
  A.H. Jawaheri
  University of Tehran, 2001 (In Persian)
- Numerical analysis of metal forming by adaptive finite element technique
  R. Adibi-asl
  University of Tehran, 2001 (In Persian)
- Analysis of progressive fracture and missile penetration in reinforced concrete structures
  M. Aram
  University of Tehran, 2001 (In Persian)
- 3D analysis of initiation and propagation of delamination in composite shells
  S. Forouzan-sepehr
  University of Tehran, 2001 (In Persian)
- Stability analysis and numerical simulation of a model of cracked rock and tunnel linings
  S. Seirafian (Supervised by: S. Mohammadi, B. Getmiri)
  University of Tehran, 2001 (In Persian)
- Nonlinear analysis of precast systems
  M.Y. Mohammadi
  Mazandaran University of Science and Technology, 2000 (In Persian)

Research projects (ongoing):

- 2D numerical modelling of cracking in large deformation problems
  M.R. Hassani, R. Attarnejad, S. Mohammadi
  University of Tehran, 2024
- Evaluation of T-stress in orthotropic media
  A. Shabani Rad, H. Bayesteh, S. Mohammadi
  University of Tehran, 2024
- Seismic isolator design using new pentamode mechanical metamaterial
  M.M. Mirzajani, S.A.K. Qorbani Tanha, S. Mohammadi
  University of Tehran, 2024
- Experimental and numerical study of the in-plane behavior of 3D printed fiber reinforced concrete (FRC) walls under dynamic loading
  N. Hosseini, M. Shahverdi, S. Mohammadi
  University of Tehran, 2024
- Coupled mechano-electrochemical analysis of intergranular stress corrosion cracking
  A. Agheli, S. Mohammadi
  University of Tehran, 2024
- Analysis of SMP fiber bridging mechanisms
  A. Foyouzat, M. Zamani, S. Mohammadi
  University of Tehran, 2024
- Numerical assessment of new structural systems
  M. Alimardani, A. Asghari, S. Mohammadi
  University of Tehran, 2024
- A new concept in failure analysis of dental implant
  M. Alipour, S. Mohammadi
  University of Tehran, 2024
- A new general variable node concurrent multiscale method
  N. Hosseinian, S. Mohammadi, O. Alizadeh
  University of Tehran, 2024
- Development of quasi-continuum multiscale method with physics-informed artificial intelligent techniques for the study of nanoscale material behaviour
  H. Ghahremani, S. Mohammadi, O. Alizadeh
  University of Tehran, 2024
- Development of physics informed neural network (PINN) method for soft tissue growth modelling
  M. Matin, S. Mohammadi
  University of Tehran, 2024
- Development of novel multiscale methods
  O. Alizadeh, S. Mohammadi
  University of Tehran, 2023
- Applications of machine/deep learning in computational mechanics
  H. Babaei, M. Zamani, S. Mohammadi
  University of Tehran, 2023
- Performance of SMA fibers in industrial applications
  A. Ardali, J. Rouzegar, S. Mohammadi
  Technical University of Shiraz, 2023
- Solving fracture mechanics equations using PINN and XFEM
  A. Emami, S. Mohammadi
  University of Tehran, 2023
- A study on the new energy absorbing structural component
  A. Torabizadeh, A. Asghari, S. Mohammadi

University of Tehran, 2022

- Multiscale analysis of polymers
  M. Vokhshoori, S. Mohammadi
  University of Tehran, 2022
- A PML based family of stretched coordinate system for wave propagation in poroelastic transversely isotropic half-space
  K. Shaker, M. Eskandari Ghadi, S. Mohammadi
  University of Tehran, 2021
- Thermomechanics fracture analysis of shape memory polymers (SMPs)
  A. Foyouzat, S. Mohammadi
  University of Tehran, 2018

Ongoing funded research projects:

- Numerical assessment of a new structural systems
  A. Asghari, S. Mohammadi
  Private sector, 2024.

- Multiscale analysis of amorphous materials
  H. Moslemzadeh, S. Mohammadi
  Iran National Science Foundation, INSF 96013175, 2018-2019.
  Funding: 120,000,000 Rials

Funded research projects:

- Development of an XFEM dynamic code for progressive fracture
  S. Mohammadi
  Foundation for Science and Technology, 2021.
  Funding: 1,000,000,000 Rials
- Conceptual study of a new guardrail technology
  S. Mohammadi, H. Bayesteh, A. Daneshyar
  Private Company, 2017.
  Funding: 100,000,000 Rials
- Numerical simulation of car impact on concrete guardrails
  S. Mohammadi, H. Bayesteh, A. Daneshyar
  Road Management Organization, Rahan Pooyesh Co. 82P857, 2015.
  Funding: 475,000,000 Rials
- Development of enriched numerical methods for analysis of new advanced industrial materials
  S. Mohammadi
  Iran National Science Foundation, INSF 93023822, 2015.
  Funding: 250,000,000 Rials
- Thermo-mechanical fracture analysis of inhomogeneous cracked solids by the extended isogeometric analysis method (XIGA)
  S. Mohammadi, H. Bayesteh, A. Afshar
  University of Tehran, Research No. 8102051/1/05, 2015.
  Funding: 30,000,000 Rials
- Numerical investigation of scaling laws for analysis of structures subjected to blast loadings
  S. Mohammadi
  Educational and Research Organization, 6675/91/009/938, 2014.
  Funding: 67,200,000 Rials
- Multiscale analysis of cyclic behaviour of concrete specimens reinforced by defected carbon nanotubes
  M. Eftekhari, S. Mohammadi, A.R. Khoi
  Iran Nano Technology Initiative Council, HRDC, 2013
  Funding: 30,000,000 Rials
- Macro and micro analysis of crack and localization phenomena in advanced materials
  S. Mohammadi
  Iran National Science Foundation, INSF 92018146, 2013.
  Funding: 200,000,000 Rials
- Multiscale modelling of fracture and plasticity by means of dislocation dynamics in structural steels hardened by nano precipitates in order to improve seismic performance
  A.R. Keyhani, S. Mohammadi, R. Roumina
  Iran Nano Technology Initiative Council, HRDC 59788, 2013
  Funding: 12,000,000 Rials
- Integrated fracture analysis of composite structures by the extended finite element method
  S. Mohammadi
  Iran National Science Foundation, INSF 90003421, 2011-2013.
  Funding: 170,000,000 Rials
- Fracture analysis of FGM composites by enriched element free Galerkin method
  S. Mohammadi
  Private sector
  Funding: 45,000,000 Rials

- Strong tangential discontinuity modeling of shear bands using extended finite element method
  S. Mohammadi, A. Daneshyar
  University of Tehran, Research No. 8102051/1/03, 2012.
  Funding: 30,000,000 Rials
- Simulation and analysis of a shaking table foundation, designed by the Soil Mechanics Lab of University of Tehran for IIEES
  S.A. Nojoomi, B. Saadati, A. Ghalandarzadeh, S. Mohammadi
  University of Tehran, 2009-2012.
  Funding: 60,000,000 Rials
- Thermo-mechanical XFEM fracture analysis of functionally graded materials
  S. Mohammadi, H. Bayesteh, S.S. Hosseini
  University of Tehran, Research No. 8102051/1/04, 2012.
  Funding: 30,000,000 Rials
- A new method for fracture analysis of FRP reinforced beams by the extended finite element method (XFEM).
  S. Mohammadi, S. Esnaashari
  University of Tehran, Research No. 8102051/1/02, 2011.
  Funding: 30,000,000 Rials
- XFEM fracture analysis of shells: the effect of crack tip enrichments
  S. Mohammadi, H. Bayesteh
  University of Tehran, Research No. 8102051/1/01, 2011.
  Funding: 30,000,000 Rials
- Numerical investigation of interaction of hydraulic and natural fractures in oil reservoirs
  S. Mohammadi, R. Keshavarzi
  PEDEC MATN 89-28-178, 2011.
  Funding: 25,000,000 Rials
- Anisotropic/orthotropic XFEM for fracture analysis of structures
  S. Mohammadi
  University of Tehran, Research UT-T5: XFEM2011 (Cardiff), 2011.
  Funding: 28,500,000 Rials
- Application of dislocation dynamics for analysis of new orthotropic materials in nano-scale
  S. Mohammadi, S. Malekafzali
  Iran Nano Technology Initiative Council, HRDC-22139, 2010
  Funding: 9,000,000 Rials
- Code of practice for the design of safe underground structures
  S. Mohammadi
  Educational and Research Organization, T/203/38/MK/5/3050, 2009.
  Funding: 1,000,000,000 Rials
- Principles of analysis and design of underground structures
  S. Mohammadi
  Building and Housing Research Centre, 2008.
  Funding: 50,000,000 Rials
- Modeling complex gas flow-fractured solid interaction by a finite/discrete element method
  S. Mohammadi
  Research UT-T5: WCCM2008 (Venice), University of Tehran, 2008.
  Funding: 17,345,000 Rials
- Experimental and numerical investigation of the impact resistance of high strength fiber concrete panels
  S. Mohammadi, Y. Farnam

Educational and Research Organization, T/203/38/4/TB/200/13/3, 2008.
Funding: 25,000,000 Rials

- Gas-solid interaction by the meshless smoothed particle hydrodynamics
  S. Mohammadi, H. Ostadhossein
  Educational and Research Organization, T/203/38/4/TB/200/13/4, 2008.
  Funding: 60,000,000 Rials
- Feasibility study and conceptual design for a code of practice for the design of structures subjected to explosive loadings.
  S. Mohammadi
  Educational and Research Organization, 2006.
  Funding: 35,000,000 Rials
- Adaptive numerical simulation of machining process involving chip creation
  S. Mohammadi, R. Adibi-asl, M. Vaz, Jr.
  University of Tehran, Research UT-T5: MPSVA2003 (Glasgow), 2003.
  Funding: 6,500,000 Rials
- Application of meshless methods in engineering analysis
  S. Mohammadi, S. Forouzan-sepehr
  University of Tehran, Research No. 614/2/988, 2003.
  Funding: 10,000,000 Rials
- Impact resistance of composite structures
  S. Mohammadi
  University of Tehran, Research UT-T5: CICE2001 (Hongkong), 2001.
  Funding: 14,000,000 Rials
- 3D analysis of initiation and propagation of delamination in composite shells subjected to impact loadings
  S. Mohammadi, S. Forouzan-sepehr
  University of Tehran, Research No. 614/2/627, 2001.
  Funding: 10,000,000 Rials
- 3D progressive damage analysis of composites by combined finite/discrete element method
  S. Mohammadi, D.R.J. Owen, D. Peric
  University of Tehran, Research UT-T5: Complas2000 (Barcelona), 2000.
  Funding: 4,000,000 Rials

Journal editorial board:

- Journal of Computational Methods in Engineering, Isfahan University of Technology (since 2009).
  http://jcme.iut.ac.ir/

Journal advisory (referee) board:

International Journals:

- International Journal for Numerical Methods in Engineering, Wiley (since 2007).
- Finite Elements in Analysis and Design, Elsevier (since 2005).
- Communications in Numerical Methods in Engineering, Wiley (since 2007).
- Computational Materials Science, Elsevier (since 2007).
- Engineering Computations, Emerald (since 2008).
- Journal of Composite Materials, Elsevier (since 2009).
- Composites Science and Technology, Elsevier (since 2010)
- International Journal of Engineering, Science and Technology, Multicraft (since 2010)
- Structural Engineering and Mechanics, Techno-Press (since 2010)
- Engineering Fracture Mechanics, Elsevier (since 2011)
- Construction and Building Materials, Elsevier (since 2011)
- International Journal for Numerical Methods in Biomedical Engineering, Wiley (since 2011)
- Computer Methods in Applied Mechanics and Engineering, Elsevier (since 2011)
- Materials Chemistry and Physics, Elsevier (since 2012)
- Journal of Rock Mechanics and Geotechnical Engineering (since 2012)
- International Journal of Solids and Structures, Elsevier (since 2012)
- The Arabian Journal for Science and Engineering, Springer (since 2013)
- Applied Mathematics and Computations, Elsevier (since 2013)
- International Journal of Acoustics and Vibration, IIAV (since 2014)
- International Journal of Impact Engineering, Elsevier (since 2014)
- Journal of Mechanics, Cambridge (since 2014)
- Journal of Applied Mathematics, Hindawi (since 2014)
- Journal of Materials: Design and Applications, SAGE (since 2014)
- Engineering Computations, Emerald (since 2014)
- Mechanical Problems in Engineering, Hindawi (since 2014)
- Mathematical Problems in Engineering, Hindawi (since 2014)
- Arabian Journal of Geosciences, Springer (since 2014)
- Shock and Vibration, Hindawi (since 2014)
- Advanced Powder Technology, Elsevier (since 2014)
- International Journal of Mechanics and Materials in Design, Springer (since 2015)
- Modelling and Simulation in Materials Science and Engineering, IOP Publishing (since 2015)
- International Journal of Mechanical Sciences, Elsevier (since 2015)
- Journal of Applied Physics A, Materials Science and Processing (since 2015)
- Composite Structures, Elseview (since 2016)
- Journal of Computational Design and Engineering, Elsevier (since 2016)
- Biomechanics and Modeling in Mechanobiology, Springer (since 2019)
- Computer Methods and Programs in Medicine, Elsevier (since 2020)

- Acta Mechanica, Springer (since 2020)
- Forces in Mechanics (since 2021)
- Mechanics of Advanced Materials and Structures (since 2021)
- Computer Methods and Programs in Biomedicine (since 2021)
- Journal of Building Engineering (since 2024)
- Reviews in Biomedical Engineering (since 2022)
- Scientific Reports, Nature (since 2023)
- Computer Physics Communications (since 2024)
- PLOS One (since 2024)
- Simulation (since 2024)

Iranian National Journals

- Journal of University College of Engineering, University of Tehran, In Persian (since 1998).
- International Journal of Science and Technology, Shiraz University (since 1998).
- International Journal of Civil Engineering, Iran University of Science and Technology (since 2007).
- International Journal of Engineering, Tehran, Iran (since 1999).
- Sharif Journal of Science and Technology, Sharif University of Technology, In Persian (since 2008).
- Journal of Computational Methods in Engineering, Isfahan University of Technology, In Persian (since 2009).
- Journal of Aerospace Science and Technology, Iranian Aerospace Society (since 1999).
- Scientia Iranica, Tehran (since 1999).
- Modarres Technical and Engineering, Tarbiat Modarres University, In Persian (since 2005).
- Amirkabir, In Persian (since 2000).
- International Journal of Engineering Sciences, Iran University of Science and Technology, In Persian (since 2000).

Academic/administrative positions:

- Member of the Selective Committee for the Academic Board
  School of Civil Engineering, University of Tehran, Since 2023.
- Member of the Board, The Management Committee, School of Civil Engineering, University of Tehran, Since 2021.
- Member of the Selective Committee for the Academic Board
  AK International University, Qazvin, 2016.
- Member of the Board, The Structures Division, Technical and Architectural Committee
  University of Tehran, Since 2021.
- Dean of School
  School of Civil Engineering, Faculty of Engineering, University of Tehran, 2015-2021.
- Member of the Selective Committee for the Academic Board
  Shahed University, Tehran, Since 2018.
- Member of Board of Trustees
  Water Institute, University of Tehran, 2016-2018.
- Member of the Selective Committee for the Academic Board
  Razi University, Kermanshah, 2016.
- Member of Postgraduate and Research Committee
  School of Civil Engineering, Faculty of Engineering, University of Tehran, 2013-2021.
- Director of High Performance Computing Lab
  School of Civil Engineering, Faculty of Engineering, University of Tehran, Since 2007.
- Scientific Editor, 4th National Civil Engineering Congress
  4th National Civil Engineering Congress, Tehran, Iran, 2008.
- Associate Dean for Postgraduate Studies
  School of Civil Engineering, Faculty of Engineering, University of Tehran, 2002-2005.
- Director of Computer Centre
  School of Civil Engineering, Faculty of Engineering, University of Tehran, 2000-2012.
- Associate Dean for Undergraduate Studies
  Faculty of Engineering, University of Tehran, 2000-2002.
- Associate Dean for Undergraduate Basic Courses
  School of Civil Engineering, Faculty of Engineering, University of Tehran, 1998-2000.

Referee for MSc/PhD theses

PhD theses

- Multiscale modelling of creep behaviour of nickel-based superalloys
  G. Tolooei Eshlaghi (Supervised by A.R. Khoei)
  Sharif University of Technology, 2023
- Thermo-hydro-mechanical-chemical modeling of fractured porous media using XFEM technique
  S.M.S. Mortazavi (Supervised by A.R. Khoei)
  Sharif University of Technology, 2023
- Crack propagation analysis in 2D orthotropic medium under thermal shock using XFEM
  S.H. Bayat (Supervised by M.B. Nazari)
  Shahrood University of Technology, 2023
- Development of the multiquadric method for dynamic interaction analysis of dam-reservoir-foundation systems
  R. Babaei (Supervised by E. Jabbari, M. Eskandari Ghadi)
  University of Qom, 2022
- Multiscale modelling of non-isothermal multiphase flow in heterogeneous porous media with computational homogenization approach
  S. Saeedmonir (Supervised by A.R. Khoei)
  Sharif University of Technology, 2022
- Development of a wave propagation simulation method in defective domains based on concurrent multi-scale analyzes
  S. Forghani (Supervised by N. Khaji)
  Tarbiar Modares University, 2022
- Finite-temperature multiscale modeling of fatigue crack propagation in nanostructures
  R. Yasbolaghi (Supervised by A.R. Khoei)
  Sharif University of Technology, 2021
- Development of an adaptive model for coupling the meshfree peridynamics to the finite element method
  J. Nikpayam (Supervised by M.A. Kouchakzadeh)
  Sharif University of Technology, 2021
- Innovative near surface mounted shape memory alloy technique for strengthening and retrofitting concrete bridges
  A.J. Abbas (Supervised by R. Attarnejad, M. Ghasemieh)
  University of Tehran, 2020
- 2D non-hydrostatic analysis of surface flow and porous medium by the combined finite element-finite volume methods
  L. Farrokhpour (Supervised by M. Montazeri Namin, M. Eskandari Ghadi)
  University of Tehran, 2020
- Analysis of continuum with cellular materials (foam) by a meshless method equipped with geometrical tools
  H. Karimi (Supervised by I.M. Kani)
  University of Tehran, 2019
- Analysis of continuum with cellular materials (foam) by a meshless method equipped with geometrical tools
  S.M. Mirfattah (Supervised by B. Boroomand, M. Azhari)
  Sharif University of Technology, 2019
- Hydraulic crack propagation in heterogeneous reservoir based on the extended multi-scale finite element method

M.R. Hajiabadi (Supervised by A.R. Khoei)
Sharif University of Technology, 2019

- Solution of linear and nonlinear partial differential equations in continuum mechanics through a local meshfree style
  E. Soleimanifar (Supervised by B. Boroumand, M. Azhari)
  Isfahan University of Technology, 2019
- Impedance functions for surface circular rigid foundation on a transversely isotropic viscoelastic functionally graded half-space
  S. Cheshmekani (Supervised by M. Eskandari-Ghadi)
  University of Tehran, 2018
- Hierarchical multi-scale modeling of large plastic deformation with application in powder compaction
  A. Rezaei Sameti (Supervised by A.R. Khoei)
  Sharif University of Technology, 2018
- An efficient coupled axisymmetric SBFEM-3D FEM approach for the analysis of soil-structure interaction problems
  M. Aslmand (Supervised by I.M. Kani)
  University of Tehran, 2018
- Experimental evaluation of rock brittleness in gas shales and simulation of hydraulic fracturing in these reservoirs using damage mechanics models
  I. Rahimzadeh Kivi (Supervised by M. Ameri, H. Molladavoodi)
  Amirkabir University of Technology, 2018
- Computing mixed mode dynamic stress intensity factors for bimaterial functionally graded materials
  S. Peyman (Supervised by Ghajar)
  KNT University of Technology, 2018
- Experimental and analytical investigation of reinforced concrete column to steel beam moment connections
  N. Bakhshayesh Eghbali (Supervised by S.R, Mirghaderi)
  University of Tehran, 2017
- Thermo-hydromechanical modeling of porous media using cohesive crack model and XFEM
  A. Mokhtari Varnofsfaderani (Supervised by B. Gatmiri)
  University of Tehran, 2017
- Numerical and experimental analysis of crack growth in a metal shell under fatigue loading and study the effect of polymer composite patch repair
  H. Zarrinzadeh (Supervised by M.Z. Kabir, A. Deylami)
  Amirkabir University of Technology, 2017
- Study of buckling-fracture interaction of the thin steel plates with central crack under repeated uniform tension
  A.E. Seif (Supervised by M.Z. Kabir)
  Amirkabir University of Technology, 2017
- Investigation of load carrying behavior and progressive failure in the sandwich panels with composite face sheets and elastomeric foam core under biaxial flexural loading
  A. Nazari (Supervised by M.Z. Kabir, H. Hosseini-Toodeshky)
  Amirkabir University of Technology, 2016
- Analysis of transversely isotropic media with exponentially graded properties having penny-shaped crack in axisymmetric condition
  M. Shahmohammadi (Supervised by M. Rahimian)
  Ferdowsi University of Mashhad, 2016
- Improvement of dynamic relaxation method for tracing the static path
  H. Estiri (Supervised by M. Rezaeiee-Pajand, F. Shahabian)

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- The effect of breathing on shear strength reduction of webs of steel plate girders
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  Amirkabir University of Technology, 2016
- Development of a stochastic spectral finite element method for analysis of faulting-induced wave propagation problems
  P. Zakian (Supervised by N. Khaji)
  Tarbiat Modarrs University, 2016
- Solution of solid mechanics problems using equilibrated basis functions and mesh-free methods
  N. Noor Mohammadi (Supervised by B. Boroomand)
  Isfahan University of Technology, 2016
- Modelling of chloride ingress into concrete considering the temperature and moisture
  M. Nemati Chari (Supervised by M. Shekarchizadeh)
  University of Tehran, 2015
- Adaptive finite volume analysis of thermal crack growth in mass concrete structures considering nonlinear vibration in the material properties
  T. Amiri (Supervised by S.R. Sabbagh Yazdi)
  K.N.T. University of Technology, 2015
- Nonlinear dynamic analysis of non-prismatic semi-rigid frames with the effects of internal forces of connections
  A. Pirmoz (Supervised by R. Attarnejad)
  University of Tehran, 2015
- Mesh adaptivity in isogeometric analysis of structures based on stress recovery error estimators
  A. Mirzakhani (Supervised by B. Hassani)
  Islamic Azad University, 2015
- Development of the finite cell method in the field of damage mechanics
  M. Ranjbar (Supervised by M. Mashayekhi, J. Parvizian)
  Isfahan University of Technology, 2015
- Modeling of hydraulic fracturing in fractured saturated porous media using the extended finite element method
  M. Vahab (Supervised by A.R. Khoei)
  Sharif University of Technology, 2015
- Dynamic modeling of ductile damage with the extended finite element method
  P. Broumand (Supervised by A.R. Khoei)
  Sharif University of Technology, 2015
- Hydro-mechanical coupling of joint in saturated discontinuous media using numerical manifold method
  M.A. Ramezanpour (Supervised by H. Ghasemzadeh, S. Bodaghpour)
  KNT University of Technology, 2014
- An investigation on bending behavior of cracked laminates with arbitrary stacking sequence using multi-scale modeling
  M. Hajikazemi (Supervised by M.H. Sadr, H.Hosseini-Toudeshky, B. Mohammadi)
  Amirkabir University of Technology, 2014
- Three-dimensional numerical modeling of oil reservoir stimulation by hydraulic fracturing technique using EFG meshless method and considering two-phase fluid flow
  S. Samimi (Supervised by A. Pak)
  Sharif University of Technology, 2014
- Probabilistic numerical solutions in solid mechanics
  S.H. Dibajian (Supervised by M. Farzin, H. Hashemalhoseini)
  Isfahan University of Technology, 2014

- Nonlinear analysis of free surface fluid with moving boundaries by the local meshless method based on the exponential basis functions
  S.M. Zandi (Supervised by B.Boroomand, A.R. Pishehvar)
  Isfahan University of Technology, 2014
- Numerical investigation of strain localization in multiphase domains by XFEM
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  KNT University of Technology, 2014
- A meshless method in space and time using exponential basis functions (EBFs) for solving linear time-dependent differential equations
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  Isfahan University of Technology, 2014
- Optimum design of cracked continuums by the extended finite element method
  H. Ghoohani Arab (Supervised by M.R. Ghasemi)
  Sistan& Baloochestan University, 2014
- Analysis of matrix cracking and delamination damage mechanisms in general symmetric composite laminates with geometric discontinuity
  G. Sadeghi (Supervised by H. Hosseini Toudeshky)
  Amirkabir University of Technology, 2014
- Shear evaluation of RC beams strengthened with composite sheets subjected to low velocity impact loading
  E. Shafei (Supervised by M.Z. Kabir)
  Amirkabir University of Technology, 2013
- Multiresolution multiscale finite volume method for simulation of oil reservoirs
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- Multi-scale modeling for determination of thermal properties of silicon nanostructures via molecular dynamics (MD) and finite element method (FEM)
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  Sharif University of Technology, 2013
- Development of new methods for stress recovery and error estimation in isogeometric analysis
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  University of Tehran, 2013
- A multiscale damage mechanics approach for modelling of matric crack induced delamination
  M. Jalalvand (Supervised by H. Hosseini Toodashki and B. Mohammadi)
  Amirkabir University of Technology, 2012
- Numerical modeling of contact-impact problems using polygonal finite element method
  S.O.R. Biabanaki (Supervised by A.R. Khoei)
  Sharif University of Technology, 2012
- Dynamic modeling of cohesive crack propagation in multiphase porous media using the extended finite element method
  T. Mohammadnejad (Supervised Prof. A.R. Khoei)
  Sharif University of Technology, 2012
- Analyzing behavior of anchored fixed roof steel storage tanks and proposing methods for shell buckling prevention under earthquake excitation
  M. Amiri (Supervised by S.R. Sabbagh Yazdi)
  KN Toosi University of Technology, 2012

- Theoretical analysis of static and dynamic growth of fractal cracks
  H. Khezrzadeh (Supervised by M. Mofid)
  Sharif University of Technology, 2012
- Coupling of meso and micro scale damage theories for damage analysis of layered composites within the continuum damage framework
  A. Farrokhabadi (Supervised by H. Hosseini Toodashky and B. Mohammadi)
  Amirkabir University of Technology, 2011
- Development of local Petrov-Galerkin meshless method for nonlinear analysis of plates
  M. Ebrahimnejad Shalmani (Supervised by N. Fallah, A.R. Khoei)
  University of Guilan, 2011
- The influence of shear band formation process on soil structure interaction and the behavior of rigid retaining walls: a numerical study
  B. Ebrahimian (Supervised by A. Noorzad)
  University of Tehran, 2011
- Acoustic cavitation effects on nonlinear dynamic interaction of concrete dams-reservoir
  F. Kalateh (Supervised by R. Attarnejad)
  University of Tehran, 2011
- Modeling of cohesive crack propagation in saturated and semi saturated porous media
  O.R. Barani (Supervised by A.R. Khoei and M. Mofid)
  Sharif University of Technology, 2011
- Micropolar modelling of crystalline metals and its application for analysis of shape memory alloys
  A. Roohbakhsh (Supervised by S.A. Sadrnejad)
  K.N. Toosi University of Technology, 2010
- Simulation of dynamic crack growth in shells using extended finite element method
  S.J. Rouzegar (Supervised by M. Mirzaei)
  Tarbiat Modares University, 2010
- Isogemetrical analysis and topology optimization of continuum structures using NURBS basic functions
  S.M. Tavakkoli (Supervised by B. Hassani and M. Khanzadi)
  Iran University of Science and Technology, 2010
- Modelling of elastic and plastic deformation fracture and crack propagation in 3D problems using adaptive finite element method
  H. Moslemi (Supervised by A.R. Khoei)
  Sharif University of Technology, 2010
- Solution of finite and infinite solid mechanics problems by semi-analytical and finite element methods
  F. Mosayebi (Supervised by B. Boroumand and M.M. Saadatpour)
  Isfahan University of Technology, 2010
- Analysis of softening behavior of rocks based on damage mechanics
  H. Molladavoodi (Supervised by A Mortazavi)
  Amirkabir University of Technology, 2010
- Elastodynamic Green's functions in transversely isotropic solids
  A. Khojasteh (Supervised by M. Rahimian)
  University of Tehran, 2010
- Smoothed fixed grid finite element method in the 2D and 3D shape identification problems in heat conduction
  M.J. Kazemzadeh Parsi (Supervised by F. Daneshmand)
  University of Shiraz, 2010
- Nonlinear dynamic analysis of fluid reservoirs by considering the effects of surface fluid slashing
  M.A. Goodarzi (Supervised by S.R. Sabbagh Yazdi and M.T. Ahmadi)

KNT University of Technology, 2009

- Using wavelet theory in solving the wave equation via adaptive method
  H. Yousefi (Supervised by J. Farjoodi and A. Noorzad)
  University of Tehran, 2009
- Multi resolution wavelet analysis and enriched radial basis functions for the adaptive solution of nearly singular PDEs
  N.A. Libre (Supervised by M. Shekarchizadeh)
  University of Tehran, 2009
- An investigation on the stability of meshfree methods based on the strong form formulation
  A. Emdadi (Supervised by M. Shekarchizadeh)
  University of Tehran, 2009
- Free vibration analysis of plates by the meshless method
  M. Khorram Nejadi (Supervised by A. Salehzadeh and H. Hosseini Toodashki)
  Amirkabir University of Technology, 2009
- Analysis of damage mechanisms in layered composites subjected to tensile loadings based on the layerwise and continiuum elastoplastic damage mechanics
  B. Mohammadi (Supervised by H. Hossein Toodashky and M.H. Sadr)
  Amirkabir University of Technology, 2008
- Elastoplastic analysis of reinforced soil by the nodal interpolation
  S.M. Binesh (Supervised by A. Ghahremani and N. Hatef)
  University of Shiraz, 2008
- Modeling and optimization of cold and hot powder forming processes
  S. Keshavarz Haddad (Supervised by A.R. Khoei and Khaloo)
  Sharif University of Technology, 2008
- Meshless GRKPM method and its application in buckling analysis of layered composites and solution of nonlinear PDEs with steep gradients
  A. Hashemian (Supervised by Shoja)
  Sharif University of Technology, 2008
- Application of adaptive dual reciprocity boundary element method in dynamic analysis of 3D structures
  S.H. Rezaei (Supervised by A. Noorzad)
  University of Tehran, 2008
- Calculation of the stiffness degradation of composite thin-walled structures in the post-buckling plate using the finite strip analysis
  S.A.M. Ghanadpour (Supervised by H.R. Oveysi)
  Amirkabir University of Technology, 2008
- Flexural strengthening of prestressed concrete beams using un-stressed and pre-stressed CFRP strips
  M.R. Aram (Supervised by M. Motavalli and M.S. Marefat)
  University of Tehran, 2007
- Coupled numerical modeling of hydraulic fracture propagation in saturated porous media with EFG-meshless method
  M. Norooz Oliaei (Supervised by A. Pak)
  Sharif University of Technology, 2007
- Nonlinear elastoplastic analysis of jointed rocks by the meshless method
  M. Hajiazizi (Supervised by A. Ghahramani)
  University of Shiraz, 2007
- Application of ALE technique in extended finite element method
  M. Anahid (Supervised by A.R. Khoei)
  Sharif University of Technology, 2007
- Three-dimensional adaptive finite element analysis of plasticity problems

S.Asil Gharehbaghi (Supervised by A.R. Khoei)
Sharif University of Technology, 2007

- A constitutive model for non-coaxial flow in sand
  A. Lashgari (Supervised by M. Latifi)
  University of Tehran, 2007
- Developing a 3D implicit discrete element method for load bearing analysis of 3D surface foundations
  A. Majidi (Supervised by M. Latifi)
  University of Tehran, 2007
- 3D finite element simulation of large strain/rotation metal forming problems based on the logarithmic stress rate model
  B.Abbasi Khazaei (Supervised by M.H. Parsa, Pishbin and Naghdabadi)
  University of Tehran , 2006
- Constitutive relationships in nonlinear analysis of RC structures considering effects of bond-slip and corrosion
  M. Ghalehnovi (Supervised by Shayanfar and Sanaee)
  University of Science and Technology, 2004
- Shape optimization of forging dies and performs using finite element method
  M. Poorsina (Supervised by Khademizadeh and Parvizian)
  Isfahan University of Technology, 2004
- Three-dimensional numerical simulation of flow in the exhaust duct and the suction pipe of hydroelectric turbine of Masjed Soleyman
  K. Abdolahzadeh (Supervised by M.A. Banihashemi)
  University of Tehran, 2004
- New methods to maintain responses convergence and control responses errors in the analysis of nonlinear dynamic models of structural systems
  A. Soroushian (Supervised by J. Farjoodi)
  University of Tehran, 2003
- Finite deformation elasto plasticity of pressure sensitive materials based on endochronic plasticity
  A. Bakhshiani (Supervised by M. Mofid and A.R. Khoei)
  Sharif University of Technology, 2002
- Nonlinear dynamic analysis using updated subspaces
  G.R. Heravi (Supervised by R. Attarnejad)
  University of Tehran, 2001
- Determination of ultimate load and possible failure lines for continuous media using adaptive finite element method
  A. Asghari (Supervised by R. Mirghaderi)
  University of Tehran, 2001
- Introduction of adaptive functions for solving variational problems
  F. Keshmiri (Supervised by S. Vahdani)
  University of Tehran, 2000

MSc theses

- Investigation of the effects of different damage functions in phase field modeling of crack initiation, growth, and branching in concrete under monotonic tensile loading
  S. Farhadi (Supervised by A.R. Sadeghirad)
  Amirkabir University of Technology, 2023
- Wave-structure interaction by the scaled-boundary finite element method
  S. Vatankhah (Supervised by P. Badiei, M. Samadzad)
  University of Tehran, 2022

- Simulation of shot peening effects on fatigue crack growth in welded T-shaped steel joints usinf the XFEM approach
  S. Eznir (Supervised by M. Zeinoddini)
  K.N. Toosi University of Technology, 2021
- Improvement of the classical theory of fracture mechanics based on the theory of material instability to enable accurate simulation of dynamic cracks in concrete
  M. Madaddi (Supervised by A. Sadeghirad, V. Lotfi)
  Amirkabir University of Technology, 2021
- Development of continuum fracture models for 2D nanomaterials to study their reinforcing effects as an additive to concrete
  B. Mousavi (Supervised by A. Sadeghirad, V. Lotfi)
  Amirkabir University of Technology, 2021
- Fatigue assessment of concrete beams reinforced by composite and hybrid bars subjected to cyclic loadings
  Z. Abdi (Supervised by A. Rahaee)
  Amirkabir University of Technology, 2021
- Interaction of fatigue and corrosion in the behaviour of reinforced concrete structures
  S. Azimi (Supervised by A.A. Ramezanianpour, M.Z. Kabir)
  Amirkabir University of Technology, 2021
- Structural health monitoring using concepts of complexity: a study of entropy change
  Y. Jamalipour Soofi (Supervised by M. Bitaraf)
  University of Tehran, 2020
- Crack growth analysis in dry media by high order numerical manifold method
  M. Asadi Zarmehri (Supervised by H. Ghasemzadeh)
  K.N. Toosi University of Technology, 2020
- Design of finite/infinite periodic metamaterials for surface wave attenuation in continuous media using Bloch wave concept
  S. Amanat (Supervised by R. Rafiee, M. Bitaraf, D. Bansal)
  University of Tehran, 2020
- T-stress in cracked anisotropic media
  S. Ghouli (Supervised by M.R. Ayatollahi)
  Iran University of Science and Technology, 2018
- The effect of the explosion on Cheragh veis dam
  S. Hadian (Supervised by A.A. Mirghasemi)
  University of Tehran, 2018
- Evaluation of the performance of two-dimensional nanoscale materials on the mechanical properties of cement nano-composites
  E. Hosseini (Supervised by A. Habibnejad Koraym)
  Iran University of Science and Technology, 2018
- Dam-reservoir interaction by a combined FEM and scaled FEM
  H. Ashori (Supervised by R. Atarnejad, S. Vahdani)
  University of Tehran, 2017
- Modeling of shear band in partially saturated porous media
  R. Asemani (Supervised by O.R. Barani)
  K.N.T. University of Technology, 2016
- Modeling shear band propagation in saturated porous media using XFEM
  E. Mikaeeli (Supervised by M.T. Kazemi)
  Sharif University of Technology, 2016
- Finite volume method for analysis of nonlinear crack propagation of concrete structures subjected to dynamic loadings
  A. Farhood (Supervised by S.R. Sabbagh Yazdi)
  K.N.T. University of Technology, 2015

- Modeling sediment transport using smoothed particle hydrodynamics method (SPH)
  S. Barabadi (Supervised by P. Badiei)
  University of Tehran, 2014
- A concurrent multiscale model for crack propagation analysis by the extended finite element method
  O. Alizadeh (Supervised by A.R. Khoei)
  Sharif University of Technology, 2013
- Numerical modeling of fracture mechanics in isotropic orthotropic FGMs by XFEM
  E. Goli (Supervised by M.T. Kazemi)
  Sharif University of Technology, 2013
- Interaction of crack and inhomogeneity/anisotropy of FGM by the extended finite element method
  M. Sadoogh (Supervised by B. Shokrollahizadeh and M.T. Kamali)
  University of Hormozgan, 2013
- Evaluation of the stress intensity factor for a crack at the interface of anisotropic biomaterial by the extended finite element method
  A. Rashvand (Supervised by B. Shokrollahizadeh and M.T. Kamali)
  University of Hormozgan, 2013
- Nonlinear finite volume analysis of concrete dams subjected to time dependent hydrodynamic loadings
  M. Bayatloo (Supervised by S.R. Sabbagh Yazdi)
  K.N. Toosi University of Technology, 2012
- Investigation of wave propagation in beam and plate base on micropolar theory
  S. Dehghan Marvasty (Supervised by A. Noorzad)
  University of Tehran, 2012
- A concurrent multi-scale modeling of heterogeneous nano-structures
  F. Jahanbakhshi (Supervised by A.R. Khoei)
  Sharif University of Technology, 2012
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  Z. Naghibi (Supervised by S.R. Sabbagh Yazdi)
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- Numerical study on local impact effects of projectile on concrete face rockfill dam
  M. Kalhor (Supervised by A. Ghanbari)
  Kharazmi University, 2012
- Nonlinear analysis of variable geometries based on the meshless methods and its application in large plastic deformations
  A. Javanmard (Supervised by F. Daneshmand, M.M. Noshksar, R. Ebrahimi)
  University of Shiraz, 2011
- A new distortion tolerant quadrilateral finite element
  A. Vaziri Astaneh (Supervised by I. Mahmoudzadeh)
  University of Tehran, 2011
- Crack propagation in ductile materials subjected to cyclic loadings using adaptive finite element method and continuum damage mechanics
  M. Eghbalian (Supervised by A.R. Khoei)
  Sharif University of Technology, 2011
- The finite element modeling of thermodynamic contact problems based on the Taylor-Galerkin approach
  H. Saffar Shahroudi (Supervised by A.R. Khoei)
  Sharif University of Technology, 2011
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  M.M. Mollanouri (Supervised by A.A. Mirghasemi)
  University of Tehran, 2011

- Numerical simulation of failure process of confined high strength concrete (HSC)
  M. Payab (Supervised by R. Abbasnia)
  Iran University Science and Technology, 2011
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  S.M. Hosseini (Supervised by S. Shah Beyk)
  Tarbiayt Modares University, 2011
- A two-dimentional numercial simulation of failure process of concrete under compression
  M. Aslami (Supervised by R. Abbasnia)
  Iran University Science and Technology, 2011
- Finite element modeling of impact problems with friction and large deformations
  M. Zeinali (Supervised by A.R. Khoei)
  Sharif University of Technology, 2011
- Effects of cracks and imperfections on seismic strength of Iranian masonry domes
  A. Saei (Supervised by S. Eshghi)
  Tarbiat Modarres Uiversity, 2010
- Modeling of aggregate-cement interaction based on the damage plasticity model
  S.M. Hosseini (Supervised by S. Shahbeik)
  Tarbiat Modarres Uiversity, 2010
- Stability analysis of underground structures
  A. Etemadi (Supervised by H. Salaryrad and S.H. Motamed)
  MA University of Technology, 2010
- Computing the mechanical properties of composite reinforced with carbon nanotube
  E. Akbari Jalalabad (Supervised by H. Ghasemzadeh)
  K.N. Toosi University of Technology, 2010
- Elastoplastic Analysis of 2D domains by the meshless methods
  M. Najjar (Supervised by B. Boroumand)
  Isfahan University of Technology, 2010
- Modeling saturated porous media using extended finite element method
  E. Haghighat (Supervised by A.R. Khoei)
  Sharif University of Technology, 2010
- Numerical modelling of fracture in concrete composites by the discrete element method
  E. Shamekhi (Supervised by A. Jafari, Y. Ju)
  University of Tehran, 2009
- Modeling fracture problems with XFEM
  P. Boroumand (Supervised by A.R. Khoei)
  Sharif University of Technology, 2009
- Free vibration analysis of plates using mesh-free method
  M. Khorramnejadi (Supervised by A.S. Nobari)
  Amirkabir University of Technology, 2009
- Analysis of FRP-reinforced slabs by the simplified SDOF model
  A. Masoumi (Supervised by J. Eskandari and M. Amini)
  MA University of Technology, 2009
- Modeling of fracture and crack propagation in 2D problems using adaptive finite element method
  H. Azadi (Supervised by A.R. Khoei)
  Sharif University of Technology, 2008
- Error estimation using the artificial neural networks in adaptive finite element method
  M. Soleimani (Supervised by A.R. Khoei)
  Sharif University of Technology, 2008
- Experimental & numerical evaluation of the beam to box column connection with through plate

F. Keshavarzi (Supervised by R. Mirghaderi)
University of Tehran, 2008

- Hierarchical multiscale modeling for the study of surface effects in crystalline nanostructures based on the Cauchy-Born law
  M.J. Abdolhosseini Ghomi (Supervised by A.R. Khoei)
  Sharif University of Technology, 2008
- Analysis of delamination in layered composites by the interface element method
  M. Jalalvand (Supervised by H. Hoseini)
  Amirkabir University of Technology, 2008
- Seismic enhancement of R.C. shear walls using shape memory alloys
  S.A. Nojoumi (Supervised by M.R. Bahari)
  University of Tehran, 2008
- Development of a finite volume model for solution of thick storage tanks under hydrodynamic loading
  M. Esmaeili (Supervised by S.R. Sabbagh Yazdi)
  K.N.Toosi University of Technology, 2008
- Time domain BEM analysis of dynamic response of shallow tunnels
  S. Karimi (Supervised by M. Rahimian)
  University of Tehran, 2007
- Optimization of bending frame structures based of theory of reliability using modified genetic algorithms
  M. Yousefi (Supervised by M.R. Ghasemi)
  University of Sistan & Baluchestan, 2007
- Numerical study on seismic behavior of hunched-back block type quay walls
  B. Jelokhani Niaraki (Supervised by A. Ghalandarzedeh)
  University of Tehran, 2007
- Average stress-strain constitutive models and fracture of brick masonry bases on its micro structure characteristics
  I. Salehi (Supervised by M. Soltani and A. Tasnimi)
  Tarbiat Modares University, 2006
- Nonlinear modeling of tensile test on CFRP L-Shaped plates glued on concrete block
  N. Nemati (Supervised by Dr. M. Motavalli)
  University of Tehran, 2006
- Three dimensional modeling of strain localization in Cosserat continuum theory
  S. Yadegari (Supervised by A.M. Khoei)
  Sharif University of Technology, 2007
- Numerical analysis of elastic-plastic rods under dynamic load by EFG method
  S. Motamedi (Supervised by A. Shafie)
  University of Yazd, 2006
- Multi objective optimization of composite laminates under heat and moisture effects using a hybrid neuro GA algorithm
  A. Ehsani (Supervised by M.R. Ghasemi)
  University of Sistan & Baluchestan, 2006
- Semi-analytical analysis of reservoir-dam-foundation interaction in time domain
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  University of Tehran, 2005
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  M. Rojhani (Supervised by A. Fakher)
  University of Tehran, 2005
- Study of the behavior of the composite floor systems under lateral laods
  L. Sarkissian (Supervised by S.M. Zahrai)
  University of Tehran, 2005

- Analysis of layered composites by the extended finite element method
  A. Assadpour (Supervised by Vafai)
  University of Tehran, 2005
- Numerical solution of earth dam body by finite point method
  A. Nemati Hayati (Supervised by S.A. Sadrnejad)
  K.N. Toosi University, 2006
- Analysis of temperature-induced stresses in mass concrete structures with post cooling systems
  E. Ghorbani (Supervised by S.R. Sabbagh Yazdi)
  K.N. Toosi University, 2005
- Analysis of fuel storage tanks and fluid structure interaction under dynamic load
  F. Saadi (Supervised by H. Khoda Rahmi)
  Emam Hossein University, 2005
- Study of the effects of concentrated massive explosives on buildings and structures and design solution against this extreme loading
  M. Azarbayejani (Supervised by I. Mahmoudzadeh)
  University of Tehran, 2005
- A finite point stress recovery technique for the finite element method
  S. Amirian (Supervised by B. Koosha and H. Hashemalhosseini)
  Isfahan University of Technology, 2004
- Application of extended finite element method in numerical modeling of contact problem
  M. Nikbakht (Supervised by A.M. Khoei)
  Sharif University of Technology, 2004
- Application of extended finite element method in numerical modeling of bi-surface plasricity
  A. Shamloo (Supervised by A.M. Khoei)
  Sharif University of Technology, 2004
- Using of wavelet theory in solving of linear vibration equation
  H. Yousefi (Supervised by A. Noorzad)
  University of Tehran, 2004
- Micromechanical consideration of particle breakage using discrete element method
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  University of Tehran, 2004
- Optimization of rigid frames under seismic loading using genetic algorithms and neural networks
  A. Mohammadzadeh (Supervised by M. R. Ghasemi and E. Salajegheh)
  University of Sistan & Baluchestan, 2004
- Multiobjective optimization of weight, cost and ultimate failure load of composite laminates using a new type of genetic algorithm
  K. Pilehvarian (Supervised by M.R. Ghasemi)
  University of Sistan & Baluchestan, 2004
- Modeling rockbolt and shotcrete in tunnels excavated through jointed rock and comparison with an empirical method
  P. Asadollahi (Supervised by M. Palassi)
  University of Tehran, 2004
- Dynamic analysis of wind effects on power towers
  M. Alemi (Supervised by M. Sadeghazar)
  University of Tehran, 2004
- Vibration analysis by a new step by step time integration technique with extra-large timesteps
  S. Soleimani (Supervised by A. Noorzad)

University of Tehran, 2004

- Design of tunnel lining in jointed rocks
  A. Gholami (Supervised by M. Palassi)
  University of Tehran, 2003
- An alternate to 3D brick elements for modeling of reinforced concrete structures using the finite element method
  M.S. Zare (Supervised by A. Ranjbaran)
  University of Sistan & Baluchestan, 2003
- Damping effect on the yield and energy spectra of near-fault earthquake response records
  M. Edalat (Supervised by R. Alaghebandiyan)
  University of Tehran, 2003
- Modeling of saturated soils under dynamic loading with kinematic and isotropic hardening multi surface plasticity models
  N. Jamali (Supervised by A.R. Khoei and S.M. Haeri)
  Sharif University of Technology, 2003
- Analysis of shells with variable thickness and application in special structures
  A. Farsad (Supervised by R. Attarnejad)
  University of Tehran, 2003
- Evaluation of structural strength based on its components
  M.A. Fooladi Toroghi (Supervised by S. Vahdani)
  University of Tehran, 2003
- A finite element software for modeling large elasto-plastic deformation problems
  S. Keshavarzi Hadad (Supervised by A.R. Khoei)
  Sharif University of Technology, 2003
- Analysis and topological optimization of two and three dimensional structures employing non-conforming finite element and noise cleaning techniques
  S.M. Tavakoli (Supervised by B. Hassani)
  Shahrood University of Technology, 2003
- Correlation of observed building performance with measured ground motion
  P. Sarabandi (Supervised by R. Attarnejad)
  University of Thehran, 2003
- Experimental study of the effect of aggregate size on the shear strength of Tehran coarse-grained soil and its simulation by the discrete element method
  A. Bagherzadeh Khalkhali (Supervised by O. Farzaneh and A.A. Mirghasemi)
  University of Tehran, 2001
- Nonlinear dynamic analysis of structures under blast loading by a modified modal analysis
  L. Ebrahimnejad (Supervised by K. Bargi)
  University of Tehran, 2001
- Evaluation of an elastoplastic model based on the critical state and limit surface
  A. Jasim (Supervised by ???)
  University of Tehran, 2001
- Elasroplastic analysis of tubular elements subjected to lateral impact
  S.M. Lajevardi (Supervised by M.R. Bahari)
  University of Tehran, 2001
- Analysis of ship collisions with offshore structures
  B. Shokrolahizadeh (Supervised by M.R. Bahari)
  University of Tehran, 2001
- Errorr estimation by adaptivity for analysis of thick bending plates
  M. Ghaffarian (Supervised by B. Boroumand and M.M. Saadatpour)
  Isfahan University of Technology, 2000

Awards:

- Top 2% of the world's most cited researchers, 2023
- Distinguished professor, Iran Academy of Science, 2022.
- Distinguished researcher, 29th Annual Festival of Research, University of Tehran, 2020.
- Distinguished professor for international book publications, Annual Festival of International Activities, University of Tehran, 2013.
- Distinguished PhD graduate, Ministry of Higher Education, 1998.