Mohammad Sadegh Ghiasi

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Education

- **PhD** in Mechanical Engineering, Northeastern University, Boston, MA · 2015-2019
  Dissertation: Mechanobiological Modeling of Bone Healing Employing Finite Element Analysis · **GPA: 4**
  Courses: Musculoskeletal Biomechanics, Advance Mechanics of Materials, Elasticity and Plasticity

- **MSc** in Mechanical Engineering, Sharif University of Technology, Tehran, Iran · 2010-2013
  Thesis: Effects of Posterior Lumbar Surgery on Biomechanics of Spine · **GPA: 4**
  Courses: Occupational Biomechanics, Intelligent Systems, Continuum Mechanics, Robotic Surgery

- **BSc** in Mechanical Engineering, University of Tehran, Tehran, Iran · 2006-2010
  Courses: Artificial Intelligence, Optimization of Mechanical Systems, Product Design & Development · **GPA: 3.73**

Research Interests

- Bone Fracture Healing, Orthopedic & Musculoskeletal Biomechanics

- Finite Element Modelling, Musculoskeletal Tissues

- Occupational Biomechanics, Kinematic of Movement, Rehabilitation

Publications (Journal Papers)

- **Ghiasi, Mohammad S.**, Navid Arjmand, Aboulfazl Shirazi-Adl, Farzam Farahmand, Hassan Hashemi, Sahar Bagheri, and Mahsa Valizadeh. "*Cross-sectional area of human trunk paraspinal muscles before and after posterior lumbar surgery using magnetic resonance imaging*." European Spine Journal 25, no. 3 (2016): 774-782.

- **Ghiasi, Mohammad S.**, Navid Arjmand, Mehrdad Boroushaki, and Farzam Farahmand. "*Investigation of trunk muscle activities during lifting using a multi-objective optimization-based model and intelligent optimization algorithms*." Medical & biological engineering & computing 54, no. 2-3 (2016): 431-440.

- Hajihosseinali, M., N. Arjmand, A. Shirazi-Adl, F. Farahmand, and **Ghiasi, Mohammad S.**, "*A novel stability and kinematics-driven trunk biomechanical model to estimate muscle and spinal forces*." Medical engineering & physics 36, no. 10 (2014): 1296-1304.

Highlighted Researches & Works

- **Graduate Research Assistant**, Beth Israel Deaconess Medical Center, Harvard Medical School · 2015-present
  - Development of a novel mechanobiological bone healing model
  - Nonlinear finite element modeling of articular joints

- **Algorithm Developer**, Quants, Quantitative Analysis Knowledge-Based Institute, Tehran, Iran · 2014-2015
  - Development of neural networks and optimization algorithms, Data mining to analyze clients of companies

- **Research** , Research Center for Science and Technology in Medicine, I.K. Hospital, Tehran, Iran · 2011-2014
  - Magnetic resonance image processing to study effects of lumbar disc surgery

- **Product Design Intern**, Raja Railroad Company, Design of foldable clamps in passenger bed, Tehran, Iran · 2010

- **Airplane Overhaul Intern**, Iran Air, Overhaul of Airbus A300 wing, Tehran, Iran · 2009

- National Electrical Vehicle Design Competition, Tehran, Iran, · 2007-2008
  - Design and prototype manufacturing of a two-passenger electrical vehicle, Power transmission section

Honors and Awards

- **Teaching Assistant**, Northeastern University, Boston, MA   2016
Advance Mechanics of Materials, Mechanical Engineering Computation and Design, and Mechanical Engineering Design

- **Dean Fellowship**, Northeastern University, USA   2015-2016

- **Full Scholarship**, Sharif University of Technology, Iran   2010-2013

- **2nd Rank** in the National Electric Vehicle Design Competition, Tehran, Iran   2008-2009

- **Full Scholarship**, University of Tehran, Iran   2006-2010

Skills

- Technical Software: MATLAB, ABAQUS, Mimics, ANSYS, Python, C++, SolidWorks

- General Software: Microsoft office Word, PowerPoint & Excel, Adobe Illustrator,

- Other Skills: Optimization, Neural Network, Data mining, Statistical Analysis

References

- **Dr. Ashkan Vaziri,** Department of Mechanical & Industrial Engineering, Northeastern University, USA, Email: *vaziri@coe.neu.edu*

- **Dr. Ara Nazarian,** Department of Orthopaedic Surgery, Harvard Medical School, USA, Email: *anazaria@bidmc.harvard.edu*