Kavous Jorabchi

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Objective

Seeking a research and development position in a major computer-aided engineering company or a research lab in the areas of *finite element analysis (FEA)* and *optimization.*

Education

PhD in Mechanical Engineering Expected 8/2011
University of Wisconsin-Madison, GPA: 3.99/4.0

B.S. in Mechanical Engineering 8/2005
University of Tehran, Tehran, Iran, GPA: 16.8/20 (Top 5% of class)

Employment Experience

Research Assistant

University of Wisconsin-Madison, Engineering Representations and Simulation Lab (ERSL), 9/2006-present

- Developed a new method to solve nonlinear algebraic equations resulting from nonlinear FEA
- Implemented a robust shape optimization algorithm for potentially slender structures
- Developed a new FEA model reduction scheme for slender structures
- Developed a FEA model for tumor radiotherapy (joint with Medical Center – University of Wisconsin)

State University of New York at Stony Brook, 6/2006-9/2006

- System identification of nonlinear systems
- Vehicle suspension system design

University of Tehran, Iran, 9/2003-8/2005

- Studied instantaneous change in the degree of freedom in planar linkage mechanisms
- Designed an amphibious human powered vehicle, HPV a collaboration between industrial design and mechanical engineering departments
- Designed a 10-kN hand screw press

Teaching Assistant

University of Wisconsin – Madison, 9/2009 – now

- Taught geometrical modeling for engineering applications

State University of New York at Stony Brook, 9/2005-6/2006

- Taught manufacturing processes and machine design

University of Tehran, Iran, 9/2003-8/2005

- Taught dynamics of machinery and mechanism design

Intern Engineer

Iran Khodro Industrial Group, Tehran, Iran, 7/2003-9/2003

- Supplied technical assistance to purchase new press machines for car manufacturing purposes

Design and Manufacture Engineer

Iranian Academic Center for Education Culture, and Research, University of Tehran, Iran, 9/2001-7/2003

- Designed and manufactured of a remote control toy car: A multidisciplinary project involving electronic engineering, mechanical engineering, and industrial design teams

Journal Publications

K.Jorabchi, K.Suresh, "Nonlinear Algebraic Reduction for Snap-fit Simulation", Journal of Mechanical Design, Vol. 131, issue 6, 061004, 2009.

K.Jorabchi, J.Danczyk, K.Suresh, "Efficient and Automated Analysis of Potentially Slender Structures", accepted for publication in Journal of Computing and Information Science in Engineering (JCISE).

K.Jorabchi, J.Danczyk, K.Suresh, "A Dual-Representation Framework for CAD Integrated Analysis of Microcantilevers", submitted to Computer-Aided Design (CAD).

Conference Publications

K.Jorabchi, J.Danczyk, K.Suresh, "Shape Optimization of Potentially Slender Structures", Presented in ASME International Design Engineering Technical Conferences (IDETC) and Computers and Information in Engineering Conference (CIE), New York, New York, 3-6 August 2009.

J.Rastegar, **K.Jorabchi**, H.Park, "Enhancement of the Vehicle Suspension Performance Using Motion-Doubling Mechanisms", Presented in ASME International Design Engineering Technical Conferences, Multi-Body Dynamics Section, Philadelphia, Pennsylvania, 9/ 2006

K.Jorabchi, A.Yousefi-koma, "A Neural Network Controller for Vibration Suppression of a Smart Fin", Presented in 47th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Rhode Island, 5/ 2006

Presentations

K.Jorabchi, B.Titz, K.Suresh, R.Jeraj, "Continuum Mechanics Based Multi-Scale Stochastic Tumor Modeling Using PET/CT Imaging", *9th US National Congress on Computational Mechanics*, San Francisco, CA, 7/2007

K.Jorabchi, J.Danczyk, K.Suresh, "Implicit Dimensional Reduction via Standard Finite Element Analysis", *9th US National Congress on Computational Mechanics*, San Francisco, CA, 7/2007

K.Suresh, S.Gopalakrishnan, **K.Jorabchi**, "Recent Advances in Shape & Topology Optimization", *Lindberg Lecture Series*, Mechanical Engineering Department, University of Wisconsin-Madison, 10/2007.

Computer skills

Programming: Java, C++, MATLAB

Soft wares: MATLAB, FEMLAB/Comsol, Ansys, Solid Works, Unigraphics (NX6), AutoCAD

Awards and Honors

Graduate student fellowship award, *9th* US National Congress on Computational Mechanics, San Francisco, CA, 7/2007

Professional development fund award, graduate school, SUNY at Stony Brook, 4/2006

Distinguished student in the 70th anniversary of University of Tehran establishment, 2004

University of Tehran top student fellowship, 2000-2002

Ranked 105 among about 300000 competitors in the National University Entrance Exam, 2000

Silver medal of national chemistry Olympiad, Tehran, Iran, 1999