Azadeh (Alice) Alipour

Assistant Professor
Department of Civil and Environmental Engineering
University of Massachusetts Amherst
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Education

Ph.D. in Civil Engineering 2007 to 2010
University of California, Irvine
Dissertation: "Life-cycle performance assessment of highway bridges under multi-hazard conditions and environmental stressors"
Advisor: Professor Masanobu Shinozuka

Master of Science (M.Sc.) in Earthquake Engineering 2004 to 2006
University of Tehran, Tehran
Dissertation: "Seismic evaluation and retrofit of connections in steel braced frames"
Advisor: Professor S. Rasoul Mirghaderi

Bachelor of Science (B.Sc.) in Civil Engineering 2000 to 2004
KNT University of Technology, Tehran

Research Interests

- Probabilistic performance evaluation of civil infrastructure components under multi-hazards
- Reliability assessment of lifelines and infrastructure systems
- Risk mitigation strategies for infrastructure systems under extreme conditions
- Life cycle engineering and management of civil infrastructures
- Study of aging mechanisms using multi-physics methods
- Damage identification and post-disaster condition assessment
- Numerical and experimental modeling of structural systems
- Retrofit and rehabilitation of existing buildings and bridges

Journal Publications

- Alipour, A., Shafei, B., and Shinozuka, M. (2010) Performance evaluation of deteriorating highway bridges in high seismic areas, *ASCE Journal of Bridge Engineering*, DOI: 10.1061/(ASCE)BE.1943-5592.0000197.

- Alipour, A., Shafei, B., and Shinozuka, M. (2010) Capacity loss evaluation of reinforced concrete bridges located in extreme chloride-laden environments, *Journal of Structure and Infrastructure Engineering*, DOI:10.1080/15732479.2010.525243.

- Shafei, B., Alipour, A., and Shinozuka, M. (2011) Corrosion of reinforced concrete members subjected to environmental stressors: A finite-element framework, *Journal of Cement and Concrete Research* (accepted with minor revisions).

- Alipour, A. and Shinozuka, M. (2011) A probabilistic framework for assessment of structural degradation due to corrosion process, to be submitted to the *Journal of Probabilistic Engineering Mechanics* (revised draft in preparation).

- Alipour, A. and Shinozuka, M. (2011) Study of uncertainties corresponding to the scour depth in bridges over waterways", to be submitted to the *Journal of Structural Safety* (in preparation, closely finished).

- Alipour, A. and Shinozuka, M. (2011) Effects of corrosion on seismic fragility parameters of reinforced concrete bridges", to be submitted to the *Journal of Earthquake Engineering and Structural Dynamics* (in preparation, closely finished).

Selected Conference Publications

- Alipour, A. and Shinozuka, M. (2011) A computational framework for probabilistic evaluation of corrosion process in reinforced concrete structures, Proceedings of the *Engineering Mechanics Institute Conference (EMI 2011)*, Boston, MA, June 2-4.

- Alipour, A., Shafei, B., and Shinozuka, M. (2011) Effect of soil-pile-structure interaction models on multi-hazard analysis of RC bridges, Proceedings of the *90th Transportation Research Board (TRB) Annual Meeting*, Washington, DC, January 23-27.

- Alipour, A. and Shinozuka, M. (2010) Earthquake and scouring combination for LRFD of highway bridges: A case-study, Proceedings of the *7th International Bridge Engineering Conference: Improving Reliability and Safety - Restoration, Renewal and Replacement*, San Antonio, TX, December 1-3.

- Alipour, A., Shafei, B., and Shinozuka, M. (2010) Deterministic and probabilistic evaluation of time to corrosion initiation of bridges located in coastal areas, Proceedings of *5th International Conference on Bridge Maintenance, Safety, and Management (IABMAS)*, Philadelphia, PA, July 11-15.

- Alipour, A., Shafei, B., and Shinozuka, M. (2010) Failure estimation of highway bridges under combined effects of scouring and earthquake, Proceedings of the *5th International Conference on Bridge Maintenance, Safety, and Management (IABMAS)*, Philadelphia, PA, July 11-15.

- Alipour, A., Shafei, B., and Shinozuka, M. (2010) Life cycle cost analysis of highway bridges in chloride-contaminated environments, Proceedings of the *ASCE-SEI Structures Congress*, Orlando, FL, May 12-14.

- Alipour, A., Shafei, B., and Shinozuka, M. (2010) Evaluation of uncertainties associated with design of highway bridges considering simultaneous effects of scouring and earthquake, Proceedings of the *ASCE-SEI Structures Congress*, Orlando, FL, May 12-14.

- Alipour, A., Shafei, B., and Shinozuka, M. (2010) A simplified soil-pile-structure interaction model for multi-hazard assessment of highway bridges, Proceedings of the *FHWA Bridge Engineering Conference*, Orlando, FL, April 8-9.

- Alipour, A. and Shinozuka, M. (2010) Maintenance strategies for performance improvement of transportation networks, Proceedings of the *Annual Meeting of Earthquake Engineering Research Institute (EERI)*, San Francisco, CA, February 3-6.

- Alipour, A. (2009) Gusset plate connections in concentrically braced steel structures, Proceedings of the *ASCE-SEI Structures Congress*, Austin, TX, May 12-15.

- Alipour, A. and Shinozuka, M. (2009) Stochastic service life prediction of civil infrastructures under deterioration processes and seismic effects, Proceedings of the *Annual Meeting of Earthquake Engineering Research Institute (EERI)*, Salt Lake City, UT, February 11-14.

- Alipour, A. and Mirghaderi, R. (2008) Seismic design of gusset plates in I-beam to built-up box column connections, Proceedings of the *5th ASCE International Engineering and Construction Conference*, Irvine, CA, August 27-29.

- Asgarian, B. and Alipour, A. (2006) Post buckling and cyclic behavior of bracing members using fiber elements, Proceedings of the *13th European Conference on Earthquake Engineering and Seismology*, Geneva, Switzerland, September 3-8.

Teaching Experience

- Instructor at University of California, Irvine
  - Structural Analysis (CEE-151A) Winter 2011
- Teaching assistant at University of California, Irvine
  - Mechanics of Materials (CEE-150) Fall 2008
  - Statics (ENGR-30) Summer 2008
  - Probability and Statistics (CEE-11) Spring 2008
  - Statics (ENGR-30) Fall 2007

Workshop Development:

- Developing and presenting workshops on "Dealing with students with mental health issues" and "Academic honesty", training workshops for the teaching assistants of the Henry Samueli School of Engineering, University of California, Irvine, December 2009 and April 2010.
- Developing and presenting the "TA Professional Development Program (TAPDP)", two-day mandatory training workshops for the new teaching assistants of the Henry Samueli School of Engineering, University of California, Irvine, September 2009 and 2010.

Awards

- Pedagogical Fellow (PF),
  University of California, Irvine (for 2009-10)
  Teaching, Learning, and Technology Center (TLTC)

Professional Affiliation

- California Engineer-In-Training, Fundamentals of Engineering
- Associate member of American Society of Civil Engineers (ASCE)
- Committee member of American Concrete Institute (ACI) Committee-374
  (on Performance-Based Seismic Design of Concrete Buildings)
- Reviewer, ASCE Journal of Bridge Engineering (2010 - present)
- Reviewer, Journal of Structure and Infrastructure Engineering (2011 - present)
- Member of Structural Engineering Association of Southern California (SEAOSC)
- Former member of EERI Student Leadership Council (SLC)
- Society of Women Engineers (SWE)