

Milad Memarzadeh

Postdoctoral Scholar, University of California Berkeley
201 Wellman Hall, UC Berkeley, Berkeley CA 94720
✉ miladm@berkeley.edu ☎ +1 540 557 7087

Employment

University of California Berkeley

Postdoctoral Scholar, *Environmental Science, Policy & Management*

Jan 2016-present

Education

Carnegie Mellon University

Ph.D., *Civil and Environmental Engineering*, GPA: 4.0

Dec 2015

Thesis: System-level Adaptive Monitoring and Control of Infrastructures: A POMDP-based Framework

Virginia Tech

M.Sc., *Civil Engineering*, GPA: 3.96

Dec 2012

Thesis: Automated 2D Detection of Construction Resources in Support of Automated Performance Assessment of Construction Operations

University of Tehran

B.Sc., *Civil Engineering*, GPA: 17.11/20

Jun 2011

Publications

Journal Articles

Milad Memarzadeh, Carl Boettiger (2016). "Measurement uncertainty matters: Ecological management using POMDPs", submitted.

Milad Memarzadeh, Carl Boettiger (2016). "Ecological management: planning and learning under observation & model uncertainty", submitted.

Matteo Pozzi, **Milad Memarzadeh**, Kelly Klima (2016). "Hidden-model processes for adaptive management under uncertain climate change", submitted.

Milad Memarzadeh, Matteo Pozzi (2016). "Planning for resilience: A sequential decision making perspective", In preparation.

Milad Memarzadeh, Matteo Pozzi (2016). "Value of information in sequential decision making: component inspection, permanent monitoring and system-level scheduling", *Reliability Engineering and System Safety*, 154, 137–151.

Milad Memarzadeh, Matteo Pozzi, J. Zico Kolter (2016). "Hierarchical modeling of systems with similar components: A framework for adaptive monitoring and control", *Reliability Engineering and System Safety*, 153, 159–169.

Milad Memarzadeh, Matteo Pozzi (2016). "Integrated inspection scheduling and maintenance planning for infrastructure systems", *Computer-Aided Civil and Infrastructure Engineering*, 31(6), 403–415.

Milad Memarzadeh, Matteo Pozzi, J. Zico Kolter (2014). "Optimal planning and learning in uncertain environments for the management of wind farms", *ASCE Journal of Computing in Civil Engineering*, 29(5), 04014076.

Milad Memarzadeh, Mani Golparvar-Fard, Juan Carlos Niebles (2013). "Automated 2D detection of construction equipment and workers from site video streams using histograms of oriented gradients and colors", *Automation in Construction*, 32, 24–37.

Milad Memarzadeh, Najmeh Mahjouri, Reza Kerachian (2013). "Evaluating sampling locations in river water quality monitoring networks: Application of dynamic factor analysis and discrete entropy theory", *Environmental Earth Sciences*, 70 (6), 2577–2585.

Sassan Aflaki, **Milad Memarzadeh** (2011). "Using two-way ANOVA and hypothesis test in evaluating crumb rubber modification (CRM) agitation effects on rheological properties of bitumen", *Construction and Building Materials*, 25(4), 2094–2106.

Sassan Aflaki, **Milad Memarzadeh** (2011). "Interpreting SuperPAVE PG test results with confidence intervals", *Construction and Building Materials*, 25(6), 2777–2784.

Conference Proceedings

Milad Memarzadeh, Matteo Pozzi (2016). "System-level inspection scheduling using value of information: A fee-based formulation", *IFIP-WG 7.5 Reliability and Optimization of Structural Systems*, Carnegie Mellon University, Pittsburgh, Pennsylvania.

Milad Memarzadeh, Matteo Pozzi (2015). "System-level inspection scheduling: An approach based on stochastic future allocation", *International Workshop on Structural Health Monitoring*, Stanford University, California.

Milad Memarzadeh, Matteo Pozzi, J. Zico Kolter (2015). "Hierarchical modeling of systems with similar components", *12th International Conference on Applications of Statistics and Probability in Civil Engineering*, Vancouver, Canada.

Milad Memarzadeh, Matteo Pozzi, J. Zico Kolter (2014). "Managing systems made up by similar components: A probabilistic framework for the maintenance of wind farms", *6th World Conference on Structural Control and Monitoring*, Barcelona, Spain.

Milad Memarzadeh, Matteo Pozzi, J. Zico Kolter (2013). "Probabilistic learning and planning for optimal management of wind farms", *International Workshop on Structural Health Monitoring*, Stanford University, California.

Carl Malings, **Milad Memarzadeh**, Matteo Pozzi (2013). "Optimal topology of sensor networks for management of infrastructure systems", *6th International Conference on Structural Health Monitoring of Intelligent Infrastructure*, Hong Kong.

Milad Memarzadeh, Arsalan Heydarian, Mani Golparvar-Fard, Juan Carlos Niebles (2012). “Real-time and automated 2D recognition and tracking of workers and equipment from site video streams for construction performance assessment”, *ASCE International Conference on Computing in Civil Engineering*, Florida, 429–436.

Milad Memarzadeh, Mani Golparvar-Fard (2012). “Monitoring and visualization of building construction embodied carbon footprint using DnAR, n-dimensional augmented reality models”, *Construction Research Congress*, Purdue University, 1330–1339.

Arsalan Heydarian, **Milad Memarzadeh**, Mani Golparvar-Fard (2012). “Automated benchmarking and monitoring of earthmoving operation’s carbon footprint using video cameras and GHG estimation model”, *ASCE International Conference on Computing in Civil Engineering*, Florida, 509–516.

Software

Milad Memarzadeh, Carl Boettiger (2016). pomdpplus: POMDP Planning and Learning in Uncertain Systems, <https://github.com/miladm12/pomdpplus> (will be online soon)

Jeroen Ooms, Carl Boettiger, **Milad Memarzadeh** (2016). appl: Wrappers in R for the APPL toolkit for approximate POMDP planning, <https://github.com/ropensci/appl>

Professional Service

Berkeley Institute for Data Science (BIDS) – <i>Member</i>	2016-present
American Society of Civil Engineers (ASCE) – <i>Associate Member</i>	2011-present
ASCE Global Center for Excellence in Computing – <i>Member</i>	2012-present
Elsevier Journal of Automation in Construction – <i>Reviewer</i>	2013-present
ASCE Journal of Infrastructure Systems – <i>Reviewer</i>	2015-present
ASCE Journal of Computing in Civil Engineering – <i>Reviewer</i>	2016-present
CMU Persian Student Organization – <i>Vice President</i>	2013-2015

Teaching Experience

Guest Lectures

CE 295 – Energy Systems and Control, *University of California Berkeley*

Title: Markov Decision Processes and Beyond

12735 – Urban Systems Modeling, *Carnegie Mellon University*

Title: Bayesian Networks

Transportation Engineering, *University of Tehran*

Title: Multivariate Regression Analysis

Teaching Assistant

Urban Systems Modeling, <i>Carnegie Mellon University</i>	2013-2015
MATLAB programming, <i>Carnegie Mellon University</i>	2013-2015
Probability and Statistics in Civil Engineering, <i>University of Tehran</i>	2009-2011
Fortran Programming, <i>University of Tehran</i>	2009-2010
Transportation Engineering, <i>University of Tehran</i>	2010-2011

Honors and Awards

Finalist of the Three Minutes Thesis Competition, <i>Carnegie Mellon University</i>	2015
Dean's Fellowship, <i>Carnegie Institute of Technology</i>	2013
Identified as an Exceptional Talents , <i>University of Tehran</i>	2010
Champions of Intramural soccer tournament, <i>Carnegie Mellon University</i>	2013, 2015

Invited Talks

Energy, Control and Applications Lab, <i>University of California Berkeley</i>	Jan 2016
Title: System-level adaptive monitoring and control of infrastructures: a POMDP-based framework.	
Institute for Complex Engineered Systems, <i>Carnegie Mellon University</i>	Fall 2015
Title: Monitoring and control of complex dynamical and interdependent systems.	
International Workshop on Structural Health Monitoring, <i>Stanford University</i>	Sep 2015
Title: System-level inspection scheduling: an approach based on stochastic future allocation.	
ASCE General Body Meeting, <i>Carnegie Mellon University</i>	Fall 2014
Title: Probabilistic Learning and Planning for Optimal Management of Wind Farms.	
International Workshop on Structural Health Monitoring, <i>Stanford University</i>	Sep 2013
Title: Probabilistic learning and planning for optimal management of wind farms.	
Advanced Infrastructure Systems Seminar, <i>Carnegie Mellon University</i>	Spring 2013
Title: Automated 2D Detection and Localization of Construction Resources in Support of Automated Performance Assessment of Construction Operations.	

ASCE International Conference on Computing in Civil Engineering, *Clearwater, Florida* 2012

Title: Real-time and Automated 2D Recognition and Tracking of Workers and Equipment from Site Video Streams for Construction Performance Assessment.

Title: Automated Benchmarking and Monitoring of Earthmoving Operation's Carbon Footprint Using Video Cameras and GHG Estimation Model.

Construction Research Congress, *Purdue University* 2012

Title: Monitoring and visualization of building construction embodied carbon footprint using DnAR, N-dimensional augmented reality models.

Media Coverage

Three Minute Thesis (3MT) Final, *Carnegie Mellon University Libraries* 2015

Title: Probabilistic learning and planning framework for optimal management of systems under uncertain environments.

Link: <https://www.youtube.com/watch?v=bSwMb2TiLzI>

Civil and Environmental Engineering, *Carnegie Mellon University* 2015

Title: Sustainably Monitoring Infrastructure Systems: Milad Memarzadeh.

Link: <https://www.youtube.com/watch?v=SzBdJ73JAsI>

Civil and Environmental Engineering, *Carnegie Mellon University* 2015

Title: Restructuring infrastructure: Building smarter systems.

Link: <https://www.cmu.edu/cee/news/news-archive/2015>

Civil and Environmental Engineering, *Carnegie Mellon University* 2015

Title: Assessment process improves wind turbine maintenance.

Link: <http://www.cmu.edu/cee/news/news-archive/2015>

Interests and Activities

Music: classical piano, flute.

Sports: Swimming (Professional) for 2 years, Football/Soccer (Competitive) for 10 years