

Shahrzad Gholami

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CONTACT INFORMATION

University of Southern California
Department of Computer Science, SAL 300
Los Angeles, CA 90089

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EDUCATION

University of Southern California
Ph.D. in Computer Science

August 2014 – Present

Sharif University of Technology
M.Sc. in Mechanical Engineering
GPA: 18.21/20 (3.91/4)

September 2011 - August 2013

Sharif University of Technology
B.Sc. in Mechanical Engineering
GPA: 18.07/20 (3.92/4)

September 2007 - September 2011

RESEARCH INTERESTS

Machine Learning, Computational Sustainability, Natural Language Processing, Artificial Intelligence, Computational Game Theory

HONORS AND AWARDS

Received **Graduate Ph.D. Fellowship**

- University of Southern California, 2014

Admitted to M.Sc. in mechanical engineering program as an exceptionally talented student

- Sharif University of Technology, 2011

Awarded **Silver Medal** in 16th National Chemistry Olympiad

- Tehran, Iran 2006

PUBLICATIONS

Journal papers:

Chao Zhang, **Shahrzad Gholami**, Debarun Kar, Arunesh Sinha, Manish Jain, Ripple Goyal and Milind Tambe, 'Keeping Pace with Criminals: An Extended Study of Designing Patrol Allocation against Adaptive Opportunistic Criminals,' **Games Journal**, 7(3), 15, June 2016.

Shahrzad Gholami, Aria Alasty, Hassan Salarieh, Mehdi Hosseinian-Sarajehlou, '*On the control of tumor growth via type-1 and interval type-2 fuzzy logic*', **Journal of Mechanics in Medicine and Biology**, August 2015.

Conference papers:

Shahrzad Gholami*, Benjamin Ford*, Fei Fang, Andy Plumptre, Milind Tambe, Margaret Driciru, Fred Wanyama, Aggrey Rwetsiba, Mustafa Nsubaga, Joshua Mabonga '*Taking it for a Test Drive: A Hybrid Spatio-temporal Model for Wildlife Poaching Prediction Evaluated through a Controlled Field Test*,' * Indicates joint first authors. (**ECML PKDD'17 - Applied Data Science Track**)

Debarun Kar, Benjamin Ford, **Shahrzad Gholami**, Fei Fang, Andy Plumptre, Milind Tambe, Margaret Driciru, Fred Wanyama, Aggrey Rwetsiba, '*Cloudy with a Chance of Poaching: Adversary Behavior Modeling and Forecasting with Real-World Poaching Data*,' In Proc. of the International Conference on Autonomous Agents and Multiagent Systems. (**AAMAS'17**)

Shahrzad Gholami, Bryan Wilder, Matthew Brown, Dana Thomas, Nicole Sintov, Milind Tambe, '*Divide to Defend: Collusive Security Games*,' In Proc. of the Conference on Decision and Game Theory for Security. (**GameSec'16**)

Shahrzad Gholami, Aria Alasty, Hassan Salarieh, '*Observer based feedback control of biodynamical model of tumor growth with sampled measurements*,' In Proc. of European Control Conference. (**ECC'16**)

Thanh H. Nguyen, Arunesh Sinha, **Shahrzad Gholami**, Milind Tambe, '*CAPTURE: A New Predictive Anti-Poaching Tool for Wildlife Protection*,' In Proc. of International Conference on Autonomous Agents and Multiagent Systems. (**Runner-up of the Best Innovative Application Paper Award at AAMAS'16**)

Workshop papers:

Shahrzad Gholami, Bryan Wilder, Matthew Brown, Arunesh Sinha, Nicole Sintov, Milind Tambe, '*A Game Theoretic Approach on Addressing Cooperation among Human Adversaries*,' In **AAMAS'16** Workshop on Security and Multiagent Systems. (SecMAS)

Thanh H. Nguyen, Arunesh Sinha, **Shahrzad Gholami**, Andrew Plumptre, Lucas Joppa, Milind Tambe, Margaret Driciru, Fred Wanyama, Aggrey Rwetsiba, Rob Critchlow, Colin Beale. '*Protecting Wildlife under Imperfect Observation*,' In **AAAI'16** Workshop. (APW)

Shahrzad Gholami, Chao Zhang, Arunesh Sinha, Milind Tambe, '*An extensive study of Dynamic Bayesian Network for patrol allocation against adaptive opportunistic criminals*,' In **IJCAI'15** Workshop on Behavioral, Economic and Computational Intelligence for Security. (BECIS)

Short Conference Papers & Demonstrations:

Shahrzad Gholami, Bryan Wilder, Matthew Brown, Dana Thomas, Nicole Sintov, Milind Tambe, '*Toward Addressing Collusion among Human Adversaries in Security Games*,' In Proc. of the 22nd biennial European Conference on Artificial Intelligence. (**ECAI'16**)

Shahrzad Gholami, Bryan Wilder, Matthew Brown, Arunesh Sinha, Nicole Sintov, Milind Tambe, '*SPECTRE: A Game Theoretic Framework for Preventing Collusion in Security Games (Demonstration)*', In Proc. of the 15th international conference on Autonomous Agents and Multiagent Systems. (AAMAS'16)

Conference Presentations:

Amanda Yoshioka-Maxwell, **Shahrzad Gholami**, Eric Rice, Milind Tambe, '*PTSD Symptoms Among a Sample of Homeless Former Foster Youth: A Predictive Approach Using Artificial Intelligence (AI)*', (Submitted, SSWR'18 Annual Conference)

Book Chapters:

Shahrzad Gholami*, Amanda Yoshioka-Maxwell*, Emily Sheng, Mary Hemler, Tanachat Nilanon, Ali Jalal Kamali, Milind Tambe, Eric Rice, '*A Multidisciplinary Study on the Relationship between Foster Care Attributes and Posttraumatic Stress Disorder Symptoms on Foster Youth*,' * Indicates joint first authors. (Will be submitted)

RESEARCH EXPERIENCE

- ◆ A multidisciplinary study on the relationship between foster care attributes and posttraumatic stress disorder symptoms on foster youth based on survey data for homeless youth.
 - *Advised by Prof. Milind Tambe and Prof. Eric Rice, Jan 2017 – April 2017*
- ◆ Developing spatiotemporal models for predicting poaching activities in conservation areas based on machine learning techniques and historical data collected over 15 years in Queen Elizabeth National Park in Uganda.
 - *Advised by Prof. Milind Tambe, June 2015 – Present*
- ◆ Study the unseen type estimation problem in different applications in natural language processing including predicting the number of all possible distinct symbols based on a portion of an ancient encrypted manuscript, predicting the number of unseen unique words based on a portion of a given English document and estimating the vocabulary size of the author.
 - *Advised by Prof. Kevin Knight, Fall 2016*
- ◆ Designing, conducting and analyzing human subject experiments on the security games involving collusion between attackers to propose a predictive human behavior model and generate an optimal security resource allocation to break the collusion between the attackers.
 - *Advised by Prof. Milind Tambe, October 2015 – June 2016*
- ◆ Contributing in developing a predictive anti-poaching tool for wildlife protection based on the real world poaching data collected over 15 years in Queen Elizabeth National Park in Uganda.
 - *Advised by Prof. Milind Tambe, August 2015 – October 2015*
- ◆ Contributing in developing criminals' behavior model with real data in the field to generate patrol allocation strategy against adaptive opportunistic criminals.
 - *Advised by Prof. Milind Tambe, January 2015 – August 2015*

- ◆ Design treatment schedule via observer based feedback control techniques with sampled measurements based on a tumor biodynamical model.
 - *Advised by Prof. Hassan Salarieh, September 2012 – August 2013*
- ◆ Control system design for continuous steel casting machines.
 - *Advised by Prof. Aria Alasty, September 2010 – September 2011*

TEACHING EXPERIENCE

Teaching Assistant, Analysis of Algorithms, University of Southern California

- Instructed by Dr. Shawn Shamsian and Prof. Victor Adamchik, Spring 2017

Teaching Assistant, Automatic Control, Sharif University of Technology

- Instructed by Prof. Aria Alasty, Spring 2013

Teaching Assistant, Numerical Computation, Sharif University of Technology

- Instructed by Dr. Hoda Sadeghain, Fall 2011

PROGRAMMING SKILLS

Programming Languages:

- Python, Java, C/C++, R, MATLAB, Mathematica

Applications:

- MySQL, LATEX, Carmel, QGIS