

Morteza Dehghani

CONTACT INFORMATION

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RESEARCH INTERESTS

Decision Making :

- Moral Decision Making*
- Analogical Decision Making*
- Effect of Culture on Decision Making*
- Effect of Culture on Perception of Risk*

Cognitive Modeling :

- Cognitive Approaches to Machine Learning*
- Cognitive Modeling of Cultural Dynamics*

Causal and Counterfactual Reasoning :

- Counterfactual Decision Making and Belief Propagation*
 - Hybrid Approaches to Causal Reasoning*
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EDUCATION

Northwestern University, Evanston, IL, USA

Ph.D. Candidate, Computer Science, Specialization in Cognitive Science, 2005-2009(expected)

- Advisor: Prof. Kenneth D. Forbus

Northwestern University, Evanston, IL, USA

M.S., Computer Science, Specialization in Cognitive Science, 2005-2007

- Advisor: Prof. Kenneth D. Forbus

University of California, Los Angeles, Los Angeles, CA, USA

M.S., Computer Science, 2003-2005

- Advisor: Prof. Adnan Darwiche

University of California, Los Angeles, Los Angeles, CA, USA

B.S., Computer Science, Technical Minor in Mathematics, 2001-2003

Irvine Valley College , Irvine, CA, USA

1999-2001

JOURNALS AND SELECTED CONFERENCES:

1. Dehghani, M., Iliev, R., Kaufmann, S. (under review). When do we “do“? Causal Explanation and Fact Mutability in Counterfactual Reasoning. *Cognition*.
2. Dehghani, M., Unsworth, S., Lovett, A., Forbus, K. (under review). A Computational Approach for Automatic Cross Cultural Classifications of Ecological Mental Models. *Cognitive Science*.
3. Ekhtiari, H., Behzadi, A., Dehghani, M., Jannati, A., Mokri, A. (under review) Prefer a Cash Slap in Your Face Over Credit for Halva. *Judgment and Decision Making*
4. Dehghani, M., Tomai, E., Forbus, K., Klenk, M. (2008). An Integrated Reasoning Approach to Moral Decision-Making. In *Proceedings of the Twenty-Third AAAI Conference on Artificial Intelligence (AAAI)*. Chicago, IL. 24% acceptance rate
5. Lovett, A., Dehghani, M., Forbus, K. (2007). Incremental Learning of Perceptual Categories for Open-Domain Sketch Recognition. *International Joint Conferences on Artificial Intelligence (IJCAI)*. Hyderabad, India. 15.6% acceptance rate

CONFERENCE AND WORKSHOP PAPERS:

6. Dehghani, M., Sachdeva, S., Ekhtiari, H., Gentner D., Forbus, K. (2009). The Role of Cultural Narratives in Moral Decision Making. To Appear In *Proceedings of the 31th Annual Conference of the Cognitive Science Society (CogSci)*, Washington, D.C.
7. Dehghani, M., Iliev, R., Kaufmann, S. (2009). Causal Explanations in Counterfactual Reasoning. To Appear in the *Proceedings of the 31th Annual Conference of the Cognitive Science Society, (CogSci)*.
8. Dehghani, M., Forbus, K. (2009). QCM: A QP-Based Concept Map System. To Appear In *Proceedings of the 23rd International Workshop on Qualitative Reasoning (QR)*.
9. Dehghani, M., Tomai, E., Forbus, K., Klenk, M. (2008). Order of Magnitude Reasoning in Modeling Moral Decision-Making. In *Proceedings of the 22nd International Workshop on Qualitative Reasoning (QR)*. Boulder, CO.
10. Lockwood, K., Lovett, A., Forbus, K., Usher, J., Dehghani, M. (2008). Automatic Interpretation of Depiction Conventions in Sketched Diagrams. In *Proceedings of the 5th Eurographics Workshop on Sketch-Based Interfaces and Modeling (SBIM)*. Annecy, France.
11. Lovett, A., Dehghani, M., Forbus, K. (2008). Building and Comparing Qualitative Description of Three-Dimensional Design Sketches. In *Proceedings of the 22nd International Workshop on Qualitative Reasoning (QR)*. Boulder, CO.
12. Lockwood, K., Lovett, A., Forbus, K., Dehghani, M., Usher, J. (2008). The Theory of Depiction for Sketches of Physical Systems. In *Proceedings of the 22nd International Workshop on Qualitative Reasoning (QR)*. Boulder, CO.
13. Dehghani, M., Tomai, E., Forbus, K., Iliev, R., Klenk, M. (2008). MoralDM: A Computational Modal of Moral Decision-Making. In *Proceedings of the 30th Annual Conference of the Cognitive Science Society (CogSci)*, Washington, D.C.
14. Lovett, A., Lockwood, K., Dehghani, M., Forbus, K. (2007). Modeling Human-Like Rates of Learning via Analogical Generalization. *Proceedings of Analogies: Integrating Multiple Cognitive Abilities*. Nashville, TN.
15. Dehghani, M., Iliev, R., Kaufmann, S. (2007). Effects of Fact Mutability in the Interpretation of Counterfactuals. *Proceedings of the 29th Annual Conference of the Cognitive Science Society (CogSci)*. Nashville, TN.
16. Dehghani, M., Unsworth, S., Lovett, A., Forbus, K. (2007). Capturing and Categorizing Mental Models of Food Webs using QCM. *21st International Workshop on Qualitative Reasoning (QR)*. Aberystwyth, U.K.

17. Forbus, K., Lockwood, K., Tomai, E., Dehghani, M., Czyz, J. (2007). Machine Reading as a Cognitive Science Research Instrument. AAAI Spring Symposium on Machine Reading. Stanford University, CA.
 18. Lovett, A., Dehghani, M., Forbus, K. (2007). Constructing Spatial Representations of Variable Detail for Sketch Recognition. AAAI Spring Symposium on Control Mechanisms for Spatial Knowledge Processing in Cognitive / Intelligent Systems. Stanford University, CA.
 19. Dehghani, M., Lovett, A. (2006). Efficient Genre Classification using Qualitative Representations. Proceedings of the 7th International Conference on Music Information Retrieval (ISMIR). Victoria, Canada.
 20. Lovett, A., Dehghani, M., Forbus, K. (2006). Efficient Learning of Qualitative Descriptions for Sketch Recognition. 20th International Workshop on Qualitative Reasoning (QR). Hanover, NH.
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REFEREED ABSTRACTS

21. Ekhtiari, H., Behzadi, A., Dehghani, M., Jannati, A., Mokri, A. (2009). The Difference between the Effects of Frequency and Amount of Punishment in Decision Making among Iranians. Member Abstract. In the Proceedings of the 31th Annual Conference of the Cognitive Science Society, (CogSci).
 22. Dehghani, M., Tomai, E., Forbus, K., Iliev, R., Klenk, M. (2008). MoralDM: A Computational Modal of Moral Decision-Making. Abstract presented at the 2008 meeting of Society of Judge and Decision Making (SJDm). Chicago, IL.
 23. Dehghani, M., Iliev, R., Kaufmann, S. (2008). Causal Explanations and Backward Counterfactuals. Member Abstract. Proceedings of the 30th Annual Conference of the Cognitive Science Society, (CogSci), Washington, D.C.
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NON-REFEREED PRESENTATIONS

24. Dehghani, M., Tomai, E., Forbus, K. (2009). Modeling the Effects of Cultural Narratives on Moral Decision Making using MoralDM. Presented at a MURI Workshop on Computational Models for Belief Revision, Group Decisions, and Cultural Shifts". MIT, MA
 25. Dehghani, M., Unsworth, S., Lovett, A., Forbus, K. (2007). Capturing and Categorizing Mental Models of Food Webs using QCM. Presented at a MURI Workshop on "Computational Models for Belief Revision, Group Decisions, and Cultural Shifts". Northwestern University, IL.
 26. Dehghani, M., Forbus, K. (2006). VModel Pro: A Concept Map System for Capturing Human Mental Models. 20th International Workshop on Qualitative Reasoning. Hanover, NH.
 27. Dehghani, M., Forbus, K. (2006). VModel Pro: A Concept Map System for Capturing Human Mental Models. Presented at a MURI Workshop on "Computational Models for Belief Revision, Group Decisions, and Cultural shifts". MIT, MA.
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REVIEWER

- 31th Annual Conference of the Cognitive Science Society (CogSci09)
- 30th Annual Conference of the Cognitive Science Society (CogSci08)
- 29th Annual Conference of the Cognitive Science Society (CogSci07)

MEMBERSHIPS

- Association for the Advancement of Artificial Intelligence (AAAI)
- Cognitive Science Society
- Society for Judgment and Decision Making

RESEARCH EXPERIENCE

- Qualitative Reasoning Group, Northwestern University, Evanston, IL**
(<http://www.qrg.northwestern.edu>)
Graduate Research Assistant **2005 - present**
Computational Models for Belief Revision, Group Decisions, and Cultural shifts (Culture).
- Automated Reasoning group, UCLA, Los Angeles, CA**
(<http://reasoning.cs.ucla.edu>)
Graduate Research Assistant **2004 - 2005**
Framework for Recursive Conditioning on Embedded Systems for Inference and Reasoning on Bayesian Networks

TEACHING EXPERIENCE

- Northwestern University, Evanston, IL**
Teaching Assistant **Fall 2008**
Cognitive Modeling
- Northwestern University, Evanston, IL**
Teaching Assistant **Fall 2007**
Cognitive Modeling
- University of California Los Angeles, Los Angeles, CA**
Teaching Associate **Summer 2004**
Operating Systems

WORK EXPERIENCE

- Symantec Co., Inc , Santa Monica, CA**
Software Developer **2003-2005**
Developing Tools for Automated Testing
- Pooyan Music Conservatory, Irvine, CA**
Classical Guitar Instructor **2001-2002**
- Item Software USA, Inc., Irvine, CA**
Programmer **1998-1999**

Best Buy Co., Inc, Mission Viejo, CA
Lead PC Technician

1998-2001

PROJECTS

Automated Mock Translation Tool, for Localization Testing

This project was developed while working at Symantec. In summary, this tool searches through many gigabytes of data/code and looks for translatable text. After finding these texts, it would partially translate these texts to German, Italian or Japanese.

Automated User Interface Testing, for Symantec Enterprise Security Architecture (SESA)

The purpose of this project was to perform automated UI testing, by mocking steps a typical user would follow to execute a procedure.

Distributed Auctions for File Sharing

Implemented in C, a distributed auctioning program for sharing/selling files over a network.

Operating System Scheduler, using English Auctions

Implemented an O.S. Scheduler using game-theory techniques.

HONORS AND
AWARDS

Murphy Fellowship 2005-2006

Member of Golden Key International Honor Society

Member of Phi Sigma Theta and Phi Theta Kappa Honor Societies

Dean's List in 2000,2001,2002

REFERENCES

Professor Kenneth D. Forbus

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Room 3-320
Evanston, IL 60208
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Professor Bryan Pardo

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