

Fatemeh Torabi Asr
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- INTERESTS** Natural Language Processing (semantics, discourse structure, discourse analysis)
Cognitive Computing (information theory, strong artificial intelligence)
Machine Learning & Data Analysis (statistical learning, neural networks, deep learning)
- EDUCATION** **PhD, Computer Science (2011 – 2015)**
Saarland University, Saarbrücken, Germany.
Thesis title: “*An information theoretic approach to production and comprehension of discourse markers*”
* With great honor (*Magna cum laude*)
- Computational Linguistics Fall School DGfS (Aug – Sep 2011)**
Institute for Computational Linguistics, University of Zürich (UZH), Switzerland.
- M.Sc. Computer Science & Engineering, major in Software (2007 – 2010)**
Shiraz University, Shiraz, Iran.
Thesis title: “*A computational model of syntactic category learning in children*”
* First rank among students of the class 2007
- B.Sc. Computer Science & Engineering, major in Software (2003 – 2007)**
Department of Computer Science and Engineering, Shiraz University, Shiraz, Iran.
Project title: “*A study on artificial intelligence game playing*”
* First rank among students of the class 2003
- RESEARCH EXPERIENCES** **Postdoctoral Research Associate (Dec. 2015 – Present)**
Cognitive Computing Lab
Indiana University, Bloomington (IN), USA
Topics: distributional semantics, short answer scoring, memory and learning
- Research Staff (Oct 2014 – Nov 2015)**
Collaborative Research Center SFB 1102, Saarland University, Saarbrücken, Germany
Topic: information density and linguistic encoding
- Research Staff (Apr 2011 – Sep 2014)**
Cluster of Excellence MMCI, Saarland University, Saarbrücken, Germany
Topic: human sentence processing and applications in dialog systems
- Visiting Researcher (Nov 2014 – Dec 2014)**
Institute for Language, Cognition and Computation, University of Edinburgh, Scotland
Successful conduction of a set of eye-tracking reading experiments on English speakers to study the effect of information and expectation on text comprehension.

Visiting Researcher (Dec 2013 – Mar 2014)

Applied CompLing Discourse Research Lab, University of Potsdam, Germany
Successful development of an event clustering component in a UIMA annotation pipeline framework as part of the *e-Identity* project involved with analyzing large-scale news corpora — method presented at the workshop on EVENTS, ACL 2014.

**TEACHING
EXPERIENCES**

Instructor (2011 – 2013)

Persian Language
Sprachezentrum, Saarland University, Saarbrücken, Germany

Instructor (2009 – 2010)

Data Structures, File Structures
Payamnour University, Shiraz, Iran

Instructor (2009 – 2010)

Advanced Programming
Pishtazan Higher Education Institute, Shiraz, Iran

Teaching Assistant (2003 – 2010)

Discrete Mathematics, Design and Analysis of Algorithms, Databases
Department of Computer Science and Engineering, Shiraz University, Shiraz, Iran.

**AWARDS
and HONORS**

Two Provost's Travel Awards for Women in Science (2016)
From: Indiana University Office of the Vice Provost for Research

Young Scientist Travel Award (2016)
From: Indiana University Cognitive Science Program the National Science Foundation

COST Action IS1312 Early Career Researcher Financial Support (2014)
From: European Cooperation in Science and Technology

Don and Betty Walker International Student Travel Award (2014)
From: Association for Computational Linguistics

Direct Entrance Award – admission without exam to the M.Sc. program (2007)
From: Shiraz University

Honorable mentions in the regional ACM programming competitions (Tehran site) as a team contestant/coach for 3 years (2005 – 2007)
From: IBM and Sharif University of Technology

PUBLICATIONS

Journal articles & book chapters

F. T. Asr and M. N. Jones (in prep.). “*An artificial language evaluation of distributional semantic models*”.

F. T. Asr and V. Demberg (in prep.) “*Discourse comprehension as a probability sensitive process: evidence from the study of but and although*”.

T. Sanders, V. Demberg, J. Hoek, M. Scholman, **F. T. Asr**, S. Zufferey J. Evers-Vermeul (under review) “*Unifying dimensions in discourse relations: How various annotation frameworks are related*”.

F. T. Asr, A. Fazly and Z. Azimifar (2013). “*From cues to categories: a computational study of children’s early word categorization*”. Theory and applications of natural language processing: Springer-Verlag Berlin Heidelberg.

M. Samadi, **F. T. Asr**, J. Schaeffer and Z. Azimifar (2009). “*Extending the applicability of pattern and endgame databases*”. IEEE Transaction on Computational Intelligence and AI in Games.

Conference proceedings

F. T. Asr, J. A. Willits and M. N. Jones (2016). “*Comparing predictive and co-occurrence based models of lexical semantics trained on child-directed speech*”. Proceedings of the 38nd Annual Conference of the Cognitive Science Society, Philadelphia, Pennsylvania, USA.

F. T. Asr and V. Demberg (2016). “*But and Although under the microscope*”. Proceedings of the 38nd Annual Conference of the Cognitive Science Society, Philadelphia, Pennsylvania, USA.

F. T. Asr and V. Demberg (2015). “*Uniform Information Density at the level of discourse relations: negation markers and discourse connective omission*”. The 11th International Conference on Computational Semantics (IWCS), London, UK.

F. T. Asr, J. Sonntag, Y. Grishina and Manfred Stede (2014). “*Conceptual and practical steps in event coreference analysis of large-scale data*”. The 2nd Workshop on EVENTS: Definition, Detection, Coreference, and Representation at ACL, Baltimore, USA.

F. T. Asr and V. Demberg (2013). *“On the information conveyed by discourse markers”*. Workshop on Cognitive Modeling and Computational Linguistics at ACL, Sofia, Bulgaria.

F. T. Asr and V. Demberg (2012). *“Implicitness of discourse relations”*. 24th International Conference on Computational Linguistics (Coling), Bombay, India.

F. T. Asr and V. Demberg (2012). *“Measuring the strength of linguistic cues for discourse relations”*. Workshop on Advances in Discourse Analysis and its Computational Aspects (ADACA), Bombay, India.

F. T. Asr, A. Fazly and Z. Azimifar (2010). *“The effect of word-internal properties on syntactic categorization: a computational modeling approach”*. Proceedings of the 32nd Annual Conference of the Cognitive Science Society, Portland, USA.

M. Samadi, J. Schaeffer, **F. T. Asr**, M. Samar and Z. Azimifar (2008). *“Using abstraction in two-player games”*. 18th Conference on Artificial Intelligence, Patras, Greece.

M. Samadi, **F. T. Asr**, Z. Azimifar and M. Z. Jahromi (2008). *“Separating the factors of the optimal solution in chess”*. 13th Annual Conference of Computer Society of Iran, Kish Island, Iran.

Conference abstracts

F. T. Asr and M. N. Jones (2016). *“Experimenting with the keyword matching approaches to automated short answer scoring”*. Midwest Speech and Language Days & Midwest Computational Linguistics Colloquium 2016, Bloomington, Indiana, USA.

V. Demberg, **F. T. Asr**, H. Rohde and M. Scholman (2015). *“Discourse expectations raised by contrastive connectives”*. Conference on Discourse Expectations: Theoretical, Experimental, and Computational Perspectives (DETEC), Edmonton, Canada.

F. T. Asr (2015). *“Colloquial Persian in discourse and dialogue”*. At the panel on Formal vs. Colloquial Persian from a Language Technology Perspective, the second biennial Symposia Iranica 2015, Cambridge, UK.

F. T. Asr and V. Demberg (2015). *“A discourse connector’s distribution determines its interpretation”*. The CUNY Conference on Human Sentence Processing 2015, Los Angeles, California, USA.

F. T. Asr and V. Demberg (2015). *“A distributional account of discourse connectives and its effect on fine-grained inferences”*. Text-link Conference, Louvain, Belgium.

F. T. Asr and V. Demberg (2014). *“Information density and the use of discourse cues”*. Conference on the Architecture and Mechanism for Language Processing (AMLaP), Edinburgh, Scotland.

F. T. Asr and V. Demberg (2013). *“Can neighboring relations help to anticipate upcoming discourse relations?”*. Conference on the Architecture and Mechanism for Language Processing (AMLaP), Marseille, France.

F. T. Asr and V. Demberg (2012). *“Tendency for causality in implicit discourse relations”*. Corpus-Assisted Discourse Analysis (CADSConf), Bologna, Italy.

F. T. Asr and V. Demberg (2012). *“Discourse expectations and implicitness of (causal) discourse relations”*. Conference on the Architecture and Mechanism for Language Processing (AMLaP), Trento, Italy.

F. T. Asr, A. Fazly and Z. Azimifar (2011). *“Simulation of a psychological experiment in a computational framework”*. 4th International Conference of Cognitive Science, Tehran, Iran.

F. T. Asr, Z. Azimifar and A. Fazly (2009). *“A statistical modeling approach for child syntax acquisition”*. 3rd International Conference of Cognitive Science, Tehran, Iran.

INVITED TALKS

Note: Presentations at conferences and home universities are not included.

Investigating distributional semantic models trained on child directed speech as human lexical memory. Language Processing Lab, University of Calgary, Alberta, Canada (September 2016)

Insights into human discourse as information communication. Department of Linguistics, Ohio State University, Columbus, USA (April 2016)

Discourse connectives from an information theoretical perspective. Department of Languages, Literature and Communication, Universiteit Utrecht, Utrecht, Netherlands (April 2015)

Uniform information density at the level of discourse relations. MODERN project meeting, Utrecht Institute of Linguistics OTS, Universiteit Utrecht, Utrecht, Netherlands (April 2015)

Approaching event analysis in large-scale data. Tech talk at Amazon, Aachen, Germany (June 2015)

A computational psycholinguistic study of the discourse markers. Computational Linguistics Colloquium, Department of Linguistics, Universitaet Potsdam (Jan 2014)

CURRENT PROJECTS

Automated short answer scoring for personalized retrieval-based learning
Collaborators: Indiana University, Purdue University

Distributional semantic models applied to human memory research
Collaborators: Indiana University, University of California

Automated discourse annotation and analysis
Collaborators: Saarland University, University of Utrecht

COMMUNITY SERVICES

Peer review for conferences: DiSpoL (2015), EMNLP (2015), ESSLLI (2014, 2016), EACL (2017)
Occasional review for journals: INFOCOMP, PLOS ONE, Discourse Processes, Behavior Research Methods
Paneling on Persian Language Technology, Symposia Iranica, Cambridge, UK (2015)
Student volunteering at the annual meeting of the ACL, Baltimore, USA (2014)

OTHER ACTIVITIES

Organization of the FEAST program at Saarland University, Germany (2012–2015)
Organization of workshops for university and high-school students (2006–2010)
Administration of Sina-Khayam interdisciplinary study group (2008–2010)
Administration of the ACM programming contests at Shiraz University (2006–2008)

COMPUTING SKILLS

- Operating systems (Unix/Microsoft/Mac)
- Programming languages and environments (C, C++, Java)
- Scripting and statistical analysis (R, Matlab, Python)
- Software design and databases (UML, SQL)
- Machine learning and computational modeling
- Software and toolkits (Weka, Gensim, Mallet, UIMA, OpenNLP, etc.)
- Version control systems (SVN/Git)
- Eye-tracking (SR-Research applications and Eye-link machines)
- Crowd-sourcing (Amazon Mechanical Turk)

LANGUAGE SKILLS

- Persian (native)
- English (fluent)
- German (A2)
- Turkish (elementary)
- Arabic (basic)