CURRICULUM VITAE

ESRA ERDEM

CONTACT INFORMATION

Technische Universität Wien
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RESEARCH INTERESTS

Artificial intelligence. In particular, the mathematical foundations of knowledge representation, reasoning about actions and change, planning, and answer set programming, and their applications.

EDUCATION

Ph.D. (Computer Sciences), The University of Texas at Austin, 2002.
Dissertation: *Theory and applications of answer set programming.*
Advisor: Vladimir Lifschitz.

M.S. (Computer Sciences), The University of Texas at Austin, 1998.

B.S. (Computer Sciences), Bilkent University, 1996, with high honors.

EMPLOYMENT HISTORY

9/2003–present	Vienna University of Technology. Post-doctoral researcher, Knowledge-Based Systems Group (Thomas Eiter). *Monitoring of plan execution, and updates of action domain descriptions.*
8/2002–8/2003	University of Toronto. Post-doctoral fellow, Cognitive Robotics Group (Hector Levesque and Ray Reiter). *The situation calculus and cognitive robotics.*
1/1999–8/2002	University of Texas at Austin. Research assistant, Department of Computer Sciences (Vladimir Lifschitz). *The mathematical theory of logic programming, knowledge representation, reasoning about actions and change, planning, and answer set programming.*
6/2001–8/2001	IBM, Austin Research Lab. Intern, Formal Verification Group (Warren Hunt and Jun Sawada). *The design and the implementation of a program to be used for hardware verification.*
8/1996–12/1998	University of Texas at Austin. Teaching assistant, Department of Computer Sciences. *Introduction to Mathematical Logic (graduate)* *Computer Science II (data structures in C++)* *Software Engineering* *Foundations of Computer Science (programming in Haskell)*

AWARDS AND HONORS

NATO Science Fellowship, 1996-2002.
Travel Award, The University of Texas at Austin, The Department of Computer Sciences, 1999 and 2001.
GTE Corporation Fellowship, 1997.
TA-Service Commendation, The University of Texas at Austin, The Department of Computer Sciences, 1997.
Full Scholarship, Bilkent University, 1992-1996.

PROFESSIONAL ACTIVITIES

PROGRAM COMMITTEE MEMBER

National Conference on Artificial Intelligence (AAAI), 2004, 2005, 2006
European Conference on Artificial Intelligence (ECAI), 2006
International Symposium on Logical Formalizations of Commonsense Reasoning (CommonSense), 2005, 2007
International Workshop on Non-Monotonic Reasoning (NMR), 2004
International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR), 2003

REVIEWER

Artificial Intelligence Journal (AIJ)
Journal of Logic and Computation (JLC)
ACM Transactions on Computational Logic (TOCL)
Theory and Practice of Logic Programming (TPLP)
Parallel Computing (PC)
IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB)
Intelligent Techniques for Planning (edited by Ioannis Vlahavas and Dimitris Vrakas)

International Joint Conference on Artificial Intelligence (IJCAI), 2003, 2005, 2007
National Conference on Artificial Intelligence (AAAI), 2002, 2004, 2005, 2006
European Conference on Artificial Intelligence (ECAI), 2004, 2006
International Conference on Principles of Knowledge Representation and Reasoning (KR), 2006
European Conference on Logics in Artificial Intelligence (JELIA), 2002, 2006
International Conference on Logic Programming (ICLP), 2006
International Conference on Computational Logic (CL), 2000
International Conference on Logic for Programming Artificial Intelligence and Reasoning (LPAR), 2005, 2006
International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR), 2001, 2003
International Workshop on Non-Monotonic Reasoning (NMR), 2004
International Symposium on Logical Formalizations of Commonsense Reasoning (CommonSense), 2003, 2005, 2007
International Symposium on Foundations of Information and Knowledge Systems (FoIKS), 2006
International Symposium on Computer and Information Sciences (ISCIS), 2004
AAAI Spring Symposium, 2001

COORDINATOR/MENTOR

Coordinator, Cognitive Robotics Reading Group, University of Toronto, 2002–2003
Coordinator, Texas Action Group at Austin, 2000–2002
Coordinator, Logic-Based AI Reading Group, University of Texas at Austin, 2001–2002
Mentor, Doctoral Consortium, International Conference on Principles of Knowledge Representation and Reasoning (KR), 2004

INVITED TALKS

"Character-Based Cladistics and Answer Set Programming", University of Texas at Austin, 1/2005.

"Evolutionary History of Languages and Answer Set Programming", University of Waterloo, 3/2003.

"Reconstructing the Evolutionary History of Indo-European Languages using Answer Set Programming", Schloss Dagstuhl, 9/2002; University of Toronto, 12/2002; University of Texas at Austin, 1/2003.

"SAT Solvers", IBM, Austin Research Labs, 8/2001.

"Missionaries and Cannibals in the Causal Calculator", University of Texas at Austin, 2/2000.

PUBLICATIONS

JOURNAL ARTICLES

1. Esra Erdem, Vladimir Lifschitz, and Don Ringe. Temporal Phylogenetic Networks and Logic Programming. To appear in *Theory and Practice of Logic Programming (TPLP)*, 2006.
2. Esra Erdem and Vladimir Lifschitz. Tight Logic Programs. In *Theory and Practice of Logic Programming (TPLP)*, 3(4–5):499–518, 2003.
3. Esra Erdem and Pierre Flener. Completing Open Logic Programs by Constructive Induction. In *International Journal of Intelligent Systems (IJIS)*, 14(10):995–1020, 1999.

REFEREED CONFERENCE AND WORKSHOP PAPERS

1. Thomas Eiter, Esra Erdem, Michael Fink, and Ján Senko. Comparing Action Descriptions based on Semantic Preferences. To appear in *Proceedings of the Tenth European Conference on Logics in Artificial Intelligence (JELIA'06)*, 2006. (Also to appear in *Proceedings of ECAI'06 Multidisciplinary Workshop on Advances in Preference Handling*, 2006.)
2. Esra Erdem and Alfredo Gabaldon. Representing Action Domains with Numeric-Valued Fluents. To appear in *Proceedings of the Tenth European Conference on Logics in Artificial Intelligence (JELIA'06)*, 2006.
3. Thomas Eiter, Esra Erdem, Michael Fink, and Ján Senko. Resolving Conflicts in Action Descriptions. To appear in *Proceedings of the Seventeenth European Conference on Artificial Intelligence (ECAI'06)*, 2006. (Also in *Proceedings of the Eleventh Workshop on Nonmonotonic Reasoning (NMR'06), Action and Change Track*, pages 353–361, 2006.)
4. Esra Erdem and Elisabeth Tillier. Genome Rearrangement and Planning. In *Proceedings of the Twentieth National Conference on Artificial Intelligence (AAAI'05)*, pages 1139–1144, 2005.
5. Esra Erdem and Alfredo Gabaldon. Cumulative Effects of Concurrent Actions on Numeric-Valued Fluents. In *Proceedings of the Twentieth National Conference on Artificial Intelligence (AAAI'05)*, pages 627–632, 2005. (Also in *Working Notes of the Sixth Workshop on Nonmonotonic Reasoning, Action, and Change (NRAC'05)*, pages 28–33, 2005.)
6. Thomas Eiter, Esra Erdem, Michael Fink, and Ján Senko. Updating Action Domain Descriptions. In *Proceedings of the Nineteenth International Joint Conference on Artificial Intelligence (IJCAI'05)*, pages 418–423, 2005.

7. Daniel R. Brooks, Esra Erdem, James W. Minett, and Don Ringe. Character-Based Cladistics and Answer Set Programming. In *Proceedings of the Seventh International Symposium on Practical Aspects of Declarative Languages (PADL'05)*, pages 37–51, 2005.

8. Esra Erdem and Martin Wong. Rectilinear Steiner Tree Construction using Answer Set Programming. In *Proceedings of the Twentieth International Conference on Logic Programming (ICLP'04)*, pages 386–399, 2004.

9. Thomas Eiter, Esra Erdem, and Wolfgang Faber. Plan Reversals for Recovery in Execution Monitoring. In *Proceedings of the Tenth Workshop on Nonmonotonic Reasoning (NMR'04), Action and Causality Track*, pages 147–154, 2004.

10. Esra Erdem, Vladimir Lifschitz, Luay Nakhleh and Don Ringe. Reconstructing the Evolutionary History of Indo-European Languages using Answer Set Programming. In *Proceedings of the Fifth International Symposium on Practical Aspects of Declarative Languages (PADL'03)*, pages 160–176, 2003.

11. Esra Erdem and Vladimir Lifschitz. Fages' Theorem for Programs with Nested Expressions. In *Proceedings of the Seventeenth International Conference on Logic Programming (ICLP'01)*, pages 242–254, 2001.

12. Esra Erdem and Vladimir Lifschitz. Transitive Closure, Answer Sets and Predicate Completion. In *Proceedings of American Association for Artificial Intelligence (AAAI) Spring Symposium*, pages 60–65, 2001.

13. Esra Erdem and Pierre Flener. A New Declarative Bias for ILP: Construction Modes. In *Work-in-Progress Reports of the Tenth International Conference on Inductive Logic Programming (ILP'00)*, pages 60–78, 2000.

14. Esra Erdem, Vladimir Lifschitz, and Martin D. F. Wong. Wire Routing and Satisfiability Planning. In *Proceedings of the First International Conference on Computational Logic (CL'00)*, pages 822–836, 2000.

15. Yuliya Babovich, Esra Erdem and Vladimir Lifschitz. Fages' Theorem and Answer Set Programming. In *Proceedings of the Eighth International Workshop on Non-Monotonic Reasoning (NMR'00)*, 2000.

16. Esra Erdem and Vladimir Lifschitz. Transformations of Logic Programs Related to Causality and Planning. In *Proceedings of the Fifth International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR'99)*, pages 107–116, 1999.

ABSTRACTS

1. Esra Erdem and Feng Wang. Reconstructing the Evolutionary History of Chinese Dialects. To be presented at the *39th International Conference on Sino-Tibetan Languages and Linguistics (ICSTLL'06)*, 2006.

WORK IN PROGRESS

1. Daniel R. Brooks, Esra Erdem, Selim T. Erdoğan, James W. Minett, and Don Ringe. Inferring Phylogenetic Trees using Answer Set Programming. *Submitted for publication.*

2. Esra Erdem and Vladimir Lifschitz. A Formal Method for Wire Routing.

3. Thomas Eiter, Esra Erdem, and Wolfgang Faber. A Logic-Based Approach to Finding Explanations for Discrepancies in Optimistic Plan Execution. (An extended version of Technical Report INFSYS RR-1843-04-03, Vienna University of Technology, 2004.) *Submitted for publication.*

4. Thomas Eiter, Esra Erdem, and Wolfgang Faber. Undoing the Effects of Action Sequences. (An extended version of Technical Report INFSYS RR-1843-04-05, Vienna University of Technology, 2004.) *Submitted for publication.*

OTHER

1. Esra Erdem. Theory and Applications of Answer Set Programming. Ph.D. Thesis, Technical Report CS-TR-02-69, Department of Computer Sciences, University of Texas at Austin, 2002.

2. Esra Erdem. Applications of Logic Programming to Planning: Computational Experiments. At URL `http://www.cs.utexas.edu/users/esra/experiments/experiments.html`, 1999.

3. Esra Erdem and Pierre Flener. A re-definition of least generalizations, and construction modes as a new declarative bias for ILP. Technical Report BU-CEIS-9718, Bilkent University, 1997.

4. Esra Erdem. An MSG Method and a Schema-Guided Logic Program Synthesis. Undergraduate thesis, Bilkent University, 1996.