ESRA ERDEM

CURRICULUM VITAE

CONTACT INFORMATION

Sabancı University
Faculty of Engineering and Natural Sciences
Orhanlı, Tuzla, Istanbul 34956

+90 (216) 4839574 (office)
esraerdem@sabanciuniv.edu
http://people.sabanciuniv.edu/esraerdem/

RESEARCH INTERESTS

Artificial intelligence. In particular, the mathematical foundations of knowledge representation, reasoning about actions and change, and answer set programming, and their applications to computational biology, biomedical informatics, and robotics.

EDUCATION

Ph.D. (Computer Sciences), The University of Texas at Austin, 2002.
Dissertation: *Theory and applications of answer set programming.*
Advisor: Vladimir Lifschitz.
Thesis committee: Chitta Baral, J. Strother Moore, Tandy Warnow, Martin D. F. Wong.

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

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

EMPLOYMENT HISTORY

9/2006–present	Sabancı University. Assistant professor, Faculty of Engineering and Natural Sciences.
9/2003–8/2006	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.*
8/1996–12/2001	University of Texas at Austin. Teaching assistant, Department of Computer Sciences.

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.

Research Funding

Principal Investigator

Cognitive Factories, 10/2011–4/2014.
The Scientific and Technical Research Council of Turkey, The Support Programme for Scientific and Technological Research Projects (1001).

Towards Intelligent, Interactive, Personalized Robot-Assisted Physical Rehabilitation, 9/2009–9/2011
(Co-PI: Volkan Patoglu). Sabancı University, Internal Research Grant.

Integration of Biomedical Ontologies and Automated Reasoning for Drug Discovery, 6/2009–12/2011.
The Scientific and Technical Research Council of Turkey, The Support Programme for Scientific and Technological Research Projects (1001).

Inferring the Evolutionary History of Turkic Languages using Answer Set Programming, 2/2008–2/2010.
The Scientific and Technical Research Council of Turkey, The Support Programme for Scientific and Technological Research Projects (1001).

Courses Taught

Assistant Professor (Sabancı University)

CS301, Algorithms	(Fall 2011)
CS400/500, Logic in Computer Science	(Spring 2007, Spring 2008, Spring 2010, Spring 2011)
CS404, Artificial Intelligence	(Fall 2008, Fall 2009)
CS502, Automated Reasoning	(Spring 2007)
CS504, Knowledge Representation and Reasoning	(Fall 2007, Fall 2008, Fall 2010)
CS506, Cognitive Robotics	(Spring 2010)
CS581, Special Topics in CS	(Fall 2006)
CS611, Advanced Topics in Artificial Intelligence	(Spring 2008, Spring 2009, Spring 2011)
CS551, Graduate Seminar I	(Fall 2006–2009)
CS552, Graduate Seminar II	(Spring 2007–2010)
PROJ 102	(Fall 2007, Fall 2009)
ENS 491/2	(Fall/Spring 2007–2010)

Teaching Assistant (University of Texas at Austin)

CS388L, Introduction to Mathematical Logic	(Fall 1999, Fall 2001)
CS307, Foundations of Computer Science	(Fall 1997, Spring 1998, Fall 1998)
CS315, Computer Science II	(Spring 1997)
CS373, Software Engineering	(Fall 1996)

THESIS COMMITTEES

MASTERS COMMITTEE SUPERVISOR

10. Zeynep Dogmus (Fall 2011–present, Sabancı University) (co-supervisor: Volkan Patoglu)
9. Giray Havur (Fall 2011–present, Sabancı University) (co-supervisor)
8. Umut Oztok (Fall 2010–present, Sabancı University)
7. Erdi Aker (Fall 2010–present, Sabancı University) (co-supervisor: Volkan Patoglu)
6. Suha Orhun Mutluergil (Fall 2010–present, Sabancı University)
5. Halit Erdogan (Fall 2009–Summer 2011, Sabancı University)
   Finding Similar or Diverse Solutions in Answer Set Programming: Theory and Applications
4. Tansel Uras (Fall 2009–Summer 2011, Sabancı University) (co-supervisor: Volkan Patoglu)
   Applications of AI Planning in Genome Rearrangement and in Multi-Robot Systems
3. Kadir Haspalamutgil (Fall 2009–Summer 2011, Sabancı University) (co-supervisor)
   Multi-Robot Systems in Cognitive Factories: Representation, Reasoning, Execution and Monitoring
2. Can Palaz (Fall 2009–Summer 2011, Sabancı University) (co-supervisor)
   Combining High-Level Causal Reasoning with Low-Level Geometric Reasoning and Motion Planning for Robotic Manipulation
1. Duygu Cakmak (Fall 2008–Summer 2010, Sabancı University)
   Reconstructing Weighted Phylogenetic Trees and Phylogenetic Networks Using Answer Set Programming

DOCTORAL COMMITTEE MEMBER (EXTERNAL)

2. Gunay Akin (Spring 2010–present, Bogazici University), Supervisor: Pinar Yolum Birbil
   Developing An Effective Commitment Store for Agent Communication: Properties, Operations And Algorithms
1. Elisabetta De Maria (Spring 2009, University of Udine), Supervisor: Angelo Montanari
   Computer Science Logic for Structure Prediction, String Comparison, and Biological Pathway Analysis

MASTERS COMMITTEE MEMBER

8. Ugur Usug (Spring 2011, Istanbul Technical University), Supervisor: Sanem Sariel
   Dynamic Temporal Planning for Multirobot Systems
7. Melda Ulusoy (Summer 2010, Sabancı University), Supervisor: Volkan Patoglu
   Haptic Rendering of Continuous Parametric Models
6. Serdar Kecici (Spring 2010, Istanbul Technical University), Supervisor: Sanem Sariel
   Tlplan-C: An Extended Temporal Planner for Modeling Continuous Change
5. Reyyan Yeniterzi (Summer 2009, Sabancı University), Supervisor: Kemal Oflazer
   Syntax-to-Morphology Alignment and Constituent Reordering in Factored Phrase-Based Statistical Machine Translation from English to Turkish

4. Ferah Gulactı (Summer 2008, Sabancı University), Supervisor: Devrim Gözuacik
Search for Atg5 Interacting Proteins by Using Yeast Two Hybrid System

3. Ferhan Ture (Summer 2008, Sabancı University), Supervisor: Kemal Oflazer
A Hybrid Machine Translation System from Turkish to English

2. Onsel Armagan (Fall 2007, Sabancı University), Supervisor: Kemal Oflazer
LingBrowser – A NLP Based Browser For Linguistic Information

1. Muge Erdogmus (Summer 2007, Sabancı University), Supervisor: Ugur Sezerman
Application of automatic mutation-gene pair extraction to diseases

SENIOR PROJECT SUPERVISOR

15. Doga Gizem Kisa (Fall 2011–Spring 2012)
Environmental Coverage with Multiple Robots

14. Guchan Ozbilgin (Fall 2011–Spring 2012), Co-Supervisor: Volkan Patoglu
Cloud Robotics

13. Baris Dincer, Umut Gencay Zorlu (Fall 2011–Spring 2012)
Mobile AI Apps

12. Ahmet Erdem Ekin (Fall 2011–Spring 2012)
Mobile AI Apps

11. Ozan Erdem (Fall 2009–Spring 2010)
Semantic web and life sciences

10. Erdi Aker, Berker Agir (Fall 2009–Spring 2010)
Intelligent robots: low-level control meets high-level reasoning

9. Selen Başol, Sinan Egilmez (Fall 2008–Spring 2009)
Semantic web and life sciences

8. Ozan Caldiran, Abdullah Ok (Fall 2008–Spring 2009), Co-Supervisor: Volkan Patoglu
Intelligent robots: low-level control meets high-level reasoning

7. Halit Erdogan (Fall 2008–Spring 2009)
Comparing phylogenies: theory and applications

6. Kadir Haspalamutgil, Can Palaz (Fall 2008–Spring 2009), Co-Supervisor: Volkan Patoglu
Intelligent robots: low-level control meets high-level reasoning

5. Seyma Mutlu (Fall 2008–Spring 2009)
Commonsense reasoning for interactive applications

4. Firat H. Tahaoglu (Fall 2008–Spring 2009)
Semantic web and life sciences

3. Tansel Uras (Fall 2008–Spring 2009), Co-Supervisor: Ugur Sezerman
Genome rearrangement: theory and applications

2. Kadir Malak (Fall 2007–Spring 2008), Co-Supervisor: Marco Aiello
Automating reasoning about web services

1. Betul Keles (Fall 2006–Spring 2007), Co-Supervisors: Devrim Gozuacik and Volkan Patoglu
Drug discovery-establishment of a cell-based drug testing system

FRESHMAN PROJECT SUPERVISOR

15. Burak Aydin, Fehmi C. Aksakal (Fall 2009)
    Co-Supervisors: Ozan Erdem, Halit Erdogan, Firat H. Tahaoglu, Tansel Uras
    AI4PUZZLES

14. Ferit C. Kocagil, Adnan Emiroglu (Fall 2009)
    Co-Supervisors: Ozan Erdem, Halit Erdogan, Firat H. Tahaoglu, Tansel Uras
    AI4PUZZLES

13. Berker Sarigun, Mehmet S. Basmaci (Fall 2009)
    Co-Supervisors: Ozan Erdem, Halit Erdogan, Firat H. Tahaoglu, Tansel Uras
    AI4PUZZLES

12. Ozge Oz, Can Terzihan (Fall 2009), Co-Supervisor: Volkan Patoglu
    Collecting expert knowledge from medical professionals

11. Ahmet D. Ihtiyar, Merve Cebi (Fall 2009), Co-Supervisor: Volkan Patoglu
    Collecting expert knowledge from medical professionals

10. Yigit S. Gucer, Birkan Suzer (Fall 2009), Co-Supervisor: Volkan Patoglu
    Collecting expert knowledge from medical professionals

9. Mehmet C. Yilmaz (Fall 2009), Co-Supervisor: Volkan Patoglu
   Collecting expert knowledge from medical professionals

8. Burcu Vitrinel, Ceren Bezzazoglu (Fall 2009), Co-Supervisor: Volkan Patoglu
   Collecting expert knowledge from medical professionals

7. Cemal I. Islak (Fall 2009), Co-Supervisor: Volkan Patoglu
   Collecting expert knowledge from medical professionals

6. Fatma E. Kavalci, Gokce Tuncer, Fatih O. Yilmaz (Fall 2009), Co-Supervisor: Volkan Patoglu
   Collecting expert knowledge from medical professionals

5. Irem Aydin, Dilara Yegenoglu (Fall 2009), Co-Supervisor: Volkan Patoglu
   Collecting expert knowledge from medical professionals

4. Utku Kaymaz (Fall 2009), Co-Supervisor: Volkan Patoglu
   Collecting expert knowledge from medical professionals

3. Abdullah Caliskan (Fall 2009), Co-Supervisor: Volkan Patoglu
   Collecting expert knowledge from medical professionals

2. Gokhan Murtezaoglu (Fall 2009), Co-Supervisor: Volkan Patoglu
   Collecting expert knowledge from medical professionals

1. Can Yildiz, Elif Ozdogan, Deniz Altunlu (Fall 2007), Co-Supervisor: Ferhan Ture
   Solving challenging grid puzzles with answer set programming

PROFESSIONAL ACTIVITIES

STEERING COMMITTEE MEMBER

- Principles of Knowledge Representation and Reasoning, Incorporated (KR, Inc.) (2010–present)

EVENT COORDINATION

- Doctoral Consortium Co-Chair, International Conference on the Principles of Knowledge Representation and Reasoning (KR), 2012
- Co-Chair, International Symposium on Logical Formalizations of Commonsense Reasoning (CommonSense), 2010
- Special Theme Chair, International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR), 2009
- Session Co-Chair, International Workshop on Non-Monotonic Reasoning (NMR), Session on Declarative Programming Paradigms and Systems for NMR, 2008

PROGRAM COMMITTEE MEMBER

- International Joint Conference on Artificial Intelligence (IJCAI), 2009, 2011, 2012
- AAAI Conference on Artificial Intelligence (AAAI), 2004, 2005, 2006, 2007, 2008, 2010, 2011, 2012
- European Conference on Artificial Intelligence (ECAI), 2006, 2008, 2010, 2012
- International Conference on Principles of Knowledge Representation and Reasoning (KR), 2012
- International Conference on Logic Programming (ICLP), 2007, 2009, 2010, 2011, 2012
- Int'l Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR), 2003, 2009, 2011
- Australasian Joint Conference on Artificial Intelligence (AI), 2008, 2009, 2010, 2011
- International Colloquium on Theoretical Aspects of Computing (ICTAC), 2008
- International Symposium on Computer and Information Sciences (ISCIS), 2008, 2009
- International Workshop on Non-Monotonic Reasoning (NMR), 2004, 2008, 2010
- International Workshop on Constraint Modelling and Reformulation (ModRef), 2008, 2010
- European Conference on Logics in Artificial Intelligence (JELIA), 2010
- International Conference on Applications of Declarative Programming and Knowledge Management (INAP), 2011
- International Symposium on Logical Formalizations of Commonsense Reasoning (CommonSense), 2005, 2007, 2009, 2011
- International Knowledge Representation and Automatic Reasoning Workshop (RCRA), 2009, 2010, 2011

- Workshop on Constraint Based Methods for Bioinformatics (WCB), 2009, 2010, 2011
- Workshop on Dynamics of Knowledge and Belief Representation, Annual German Conference on Artificial Intelligence (KI), 2007
- Workshop on Logic Programming (WLP), 2011
- AAAI Conference on Artificial Intelligence, Student Abstract and Poster Program Track, 2010, 2011, 2012
- European Starting AI Researcher Symposium (STAIRS), 2010
- ICAPS Workshop on Combining Task and Motion Planning for Real-World Applications (TAMPRA), 2012

REVIEWER: JOURNALS AND BOOK CHAPTERS

- 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)
- BioMed Central
- Logic Journal of the IGPL
- Data and Knowledge Engineering (DKE)
- Intelligent Techniques for Planning (edited by Ioannis Vlahavas and Dimitris Vrakas)

REVIEWER: CONFERENCES AND WORKSHOPS

- International Joint Conference on Artificial Intelligence (IJCAI), 2003, 2005, 2007, 2009, 2011, 2012
- AAAI Conference on Artificial Intelligence (AAAI), 2002, 2004, 2005, 2006, 2007, 2008, 2010, 2011, 2012
- European Conference on Artificial Intelligence (ECAI), 2004, 2006, 2008, 2010, 2012
- International Conference on Principles of Knowledge Representation and Reasoning (KR), 2006, 2008, 2012
- European Conference on Logics in Artificial Intelligence (JELIA), 2002, 2006, 2010
- International Conference on Logic Programming (ICLP), 2006, 2007, 2008, 2009, 2010, 2011, 2012
- International Conference on Principles and Practice of Constraint Programming (CP), 2007
- International Conference on Computational Logic (CL), 2000
- International Conference on Logic for Programming Artificial Intelligence and Reasoning (LPAR), 2005, 2006, 2010

- International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR), 2001, 2003, 2009, 2011
- International Conference on Autonomous Agents and Multiagent Systems (AAMAS), 2007
- Australasian Joint Conference on Artificial Intelligence (AI), 2008, 2009, 2010
- International Symposium on Artificial Intelligence and Mathematics (ISAIM), 2008
- International Symposium on Logical Formalizations of Commonsense Reasoning (CommonSense), 2003, 2005, 2007, 2009, 2011
- International Symposium on Foundations of Information and Knowledge Systems (FoIKS), 2006
- International Symposium on Computer and Information Sciences (ISCIS), 2004, 2008, 2009
- AAAI Spring Symposium, 2001, 2010
- International Colloquium on Theoretical Aspects of Computing (ICTAC), 2008
- International Workshop on Non-Monotonic Reasoning (NMR), 2004, 2008, 2010
- International Workshop on Constraint Modelling and Reformulation (ModRef), 2008, 2010
- International Knowledge Representation and Automatic Reasoning Workshop (RCRA), 2009, 2010, 2011
- Workshop on Constraint Based Methods for Bioinformatics (WCB), 2009, 2010, 2011
- Workshop on Dynamics of Knowledge and Belief Representation, Annual German Conference on Artificial Intelligence (KI), 2007
- AAAI Conference on Artificial Intelligence, Student Abstract and Poster Program Track, 2010, 2011, 2012
- European Starting AI Researcher Symposium (STAIRS), 2010
- ICAPS Workshop on Combining Task and Motion Planning for Real-World Applications (TAMPRA), 2012

REVIEWER: PROJECTS AND PROPOSALS

- The Scientific and Technical Research Council of Turkey, Technology and Innovation Funding Programs Directorate (TEYDEB), 2007, 2008, 2009, 2010, 2011
- The Scientific and Technical Research Council of Turkey, Academic Research Funding Program Directorate (ARDEB), 2009

FACULTY SERVICES

- Computer Science and Engineering Program Coordinator (Fall 2011–present, Sabancı University)
- Academic Success Monitoring and Counseling Committee (Spring 2010–present, Sabancı University)
- TA Assignment Committee (Spring 2010–present, Sabancı University)
- Gursel Sönmez Award Committee Member (Spring 2009, Sabancı University)
- CS Seminar Coordinator (Fall 2007–Spring 2010, Sabancı University)
- Diploma Area Advisor (Fall 2007–Fall 2008, Sabancı University)

OTHER

- Co-Organizer, Computer Science and Engineering Student Workshop (CSW), 2010, 2011, 2012
- Organizer, Oberseminar Talks, 2010
- Organizer, AI Day at Sabancı University, 2008, 2010
- Panel Coordinator, "Existing Successful Applications of ASP/LPNMR", International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR), 2009
- Panelist, "Applications of Nonmonotonic Reasoning", Workshop on Nonmonotonic Reasoning (NMR), 2006
- 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, Int'l Conf. on Principles of Knowledge Representation and Reasoning (KR), 2004

INVITED TALKS

29. SRI International, Artificial Intelligence Center, 9/2011.
Finding Answers and Generating Explanations for Complex Biomedical Queries.

28. Vienna University of Technology, 12/2010.
Querying Biomedical Ontologies using Answer Set Programming.

27. Koc University, 5/2010.
Applications of Automated Reasoning.

26. New Mexico State University, 2/2010.
Querying Biomedical Ontologies in a Controlled Natural Language.

25. University of Arizona, 2/2010.
Querying Biomedical Ontologies in a Controlled Natural Language.

24. University of Arizona, 2/2010.
Bridging the Gap between High-Level Reasoning and Low-Level Control.

23. University of Texas at Austin, 1/2010.
Querying Biomedical Ontologies in a Controlled Natural Language.

22. University of Texas at Austin, 1/2010.
Bridging the Gap between High-Level Reasoning and Low-Level Control.

21. Istanbul Technical University, 11/2009.
Bridging the Gap between High-Level Reasoning and Low-Level Control.

20. Guizhou University, 10/2009.
Efficient Haplotype Inference with Answer Set Programming.

19. Guizhou Academy of Sciences, 10/2009.
Computational Cladistics with Answer Set Programming.

18. University of Groningen, 4/2009.
Genome Rearrangement and Planning.

17. Sabancı University, 9/2008.
Computational Cladistics with Answer Set Programming.

16. Vienna University of Technology, 9/2008.
Efficient Haplotype Inference with Answer Set Programming.

15. National Institutes of Health, National Library of Medicine, 7/2008.
A New Approach to Integrating Biomedical Ontologies and Answering Complex Queries related to Drug Discovery.

14. National Institutes of Health, National Center for Biotechnology Information, 7/2008.
Efficient Haplotype Inference with Answer Set Programming.

13. University of Groningen, 6/2008.
Inferring Phylogenetic Trees using Answer Set Programming.

12. AI Day at Sabancı University, 5/2008.
A New Approach to Integrating Biomedical Ontologies and Answering Complex Queries related to Drug Discovery.

11. Bogazici University, 5/2008.
Inferring Phylogenetic Trees using Answer Set Programming.

10. Middle East Technical University, 4/2008.
Inferring Phylogenetic Trees using Answer Set Programming.

9. Simon Fraser University, 7/2007.
Inferring Phylogenetic Trees using Answer Set Programming.

8. Sabancı University, 6/2006.
Logic-Based Artificial Intelligence and the Genome Rearrangement Problem.

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

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

5. University of Texas at Austin, 1/2003.
Reconstructing the Evolutionary History of Indo-European Languages using Answer Set Programming.

4. University of Toronto, 12/2002.
Reconstructing the Evolutionary History of Indo-European Languages using Answer Set Programming.

3. Schloss Dagstuhl, 9/2002.
Reconstructing the Evolutionary History of Indo-European Languages using Answer Set Programming.

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

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

PUBLICATIONS

BOOKS

1. Esra Erdem, Fangzhen Lin, and Torsten Schaub (editors). *Proceedings of the Tenth International Conference on Logic Programming and Nonmonotonic Reasoning, Lecture Notes in Computer Science, Lecture Notes in Artificial Intelligence*, Vol. 5753, 2009. ISBN 978-3-642-04237-9.

BOOK CHAPTERS

1. Esra Erdem. Applications of Answer Set Programming in Phylogenetic Systematics. In *Logic Programming, Knowledge Representation, and Nonmonotonic Reasoning: Essays Dedicated to Michael Gelfond on the Occasion of His 65th Birthday, Lecture Notes in Computer Science*, Vol. 6565, pages 415–431, 2011.

JOURNAL ARTICLES

11. Thomas Eiter, Esra Erdem, Halit Erdogan, and Michael Fink. Finding Similar/Diverse Solutions in Answer Set Programming. In *Theory and Practice of Logic Programming (TPLP)*, 2011. DOI:10.1017/S1471068411000548

10. Duygu Cakmak, Esra Erdem, and Halit Erdogan. Computing Weighted Solutions in ASP: Representation-Based Method vs. Search-Based Method. In *Annals of Mathematics and Artificial Intelligence (AMAI)*, 2011. DOI: 10.1007/s10472-011-9242-1

9. Mark Buller, Paul Cuddihy, Ernest Davis, Patrick Doherty, Finale Doshi-Velez, Esra Erdem, Douglas Fisher, Nancy Green, Knut Hinkelmann, James McLurkin, Mary Lou Maher, Rajiv Maheswaran, Sara Rubinelli, Nathan Schurr, Donia Scott, Dylan Shell, Pedro Szekely, Barbara Thoenssen, Arnold B. Urken. Reports of the AAAI 2011 Spring Symposia. In *AI Magazine*, 32(3):119–127, 2011.

8. Thomas Eiter, Esra Erdem, Michael Fink, and Ján Senko. Updating Action Domain Descriptions. In *Artificial Intelligence Journal (AIJ)*, 174(15):1172–1221, 2010. DOI:10.1016/j.artint.2010.07.004

7. Thomas Eiter, Esra Erdem, and Wolfgang Faber. Undoing the Effects of Action Sequences. In *Journal of Applied Logic (JAL)*, 6(3):380–415, 2008. DOI:10.1016/j.jal.2007.05.002

6. Thomas Eiter, Esra Erdem, Wolfgang Faber, and Ján Senko. A Logic-Based Approach to Finding Explanations for Discrepancies in Optimistic Plan Execution. In *Fundamenta Informaticae (FI)*, 79(1-2):25–69, 2008.

5. Daniel R. Brooks, Esra Erdem, Selim T. Erdogan, James W. Minett, and Don Ringe. Inferring Phylogenetic Trees using Answer Set Programming. In *Journal of Automated Reasoning (JAR)*, 39(4):471–511, 2007. DOI:10.1007/s10817-007-9082-1

4. Thomas Eiter, Esra Erdem, Michael Fink, and Ján Senko. Comparing Action Descriptions Based on Semantic Preferences. In *Annals of Mathematics and Artificial Intelligence (AMAI)*, 50(3-4):273-304, 2007. DOI:10.1007/s10472-007-9077-y

3. Esra Erdem, Vladimir Lifschitz, and Don Ringe. Temporal Phylogenetic Networks and Logic Programming. In *Theory and Practice of Logic Programming (TPLP)*, 6(5):539–558, 2006. DOI:10.1017/S1471068406002729

2. Esra Erdem and Vladimir Lifschitz. Tight Logic Programs. In *Theory and Practice of Logic Programming (TPLP)*, 3(4–5):499–518, 2003. DOI:10.1017/S1471068403001765

1. Esra Erdem and Pierre Flener. Completing Open Logic Programs by Constructive Induction. In *International Journal of Intelligent Systems (IJIS)*, 14(10):995–1020, 1999. DOI:10.1002/(SICI)1098-111X(199910)14:10<995::AID-INT4>3.0.CO;2-W

REFEREED CONFERENCE AND WORKSHOP PAPERS

52. Esra Erdem, Katsumi Inoue, Johannes Oetsch, Joerg Puehrer, Hans Tompits, and Cemal Yilmaz. Answer-Set Programming as a New Approach to Event-Sequence Testing. In *Proceedings of the Third International Conference on Advances in System Testing and Validation Lifecycle (VALID'11)*, 2011.

51. Erdi Aker, Ahmetcan Erdogan, Esra Erdem, and Volkan Patoglu. Housekeeping with Multiple Autonomous Robots: Knowledge Representation and Automated Reasoning for a Tightly Integrated Robot Control Architecture. In *Proceedings of the IROS 2011 Workshop on Knowledge Representation for Autonomous Robots*, 2011.

50. Esra Erdem, Kadir Haspalamutgil, Volkan Patoglu, and Tansel Uras. Causality-Based Planning and Diagnostic Reasoning for Cognitive Factories. Accepted to *IEEE Sixteenth Conference on Emerging Technologies and Factory Automation (ETFA 2011)*, 2011.

49. Esra Erdem, Halit Erdogan, and Umut Oztok. BIOQUERY-ASP: Querying Biomedical Ontologies using Answer Set Programming. In *Proceedings of RuleML2011@BRF Challenge*, 2011.

48. Esra Erdem, Yelda Erdem, Halit Erdogan, and Umut Oztok. Finding Answers and Generating Explanations for Complex Biomedical Queries. In *Proceedings of the Twenty-Fifth AAAI Conference on Artificial Intelligence (AAAI'11)*, 2011.

47. Umut Oztok and Esra Erdem. Generating Explanations for Complex Biomedical Queries. In *Proceedings of the Twenty-Fifth AAAI Conference on Artificial Intelligence (AAAI'11)*, 2011.

46. Erdi Aker, Ahmetcan Erdogan, Esra Erdem, and Volkan Patoglu. Causal Reasoning for Planning and Coordination of Multiple Housekeeping Robots. In *Proceedings of the Twelfth International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR'11)*, 2011.

45. Esra Erdem, Kadir Haspalamutgil, Can Palaz, Volkan Patoglu, Tansel Uras. Combining High-Level Causal Reasoning with Low-Level Geometric Reasoning and Motion Planning for Robotic Manipulation. In *Proceedings of the 2011 IEEE International Conference on Robotics and Automation (ICRA 2011)*, 2011.

44. Erdi Aker, Ahmetcan Erdogan, Esra Erdem, and Volkan Patoglu. Housekeeping with Multiple Autonomous Robots: Representation, Reasoning and Execution. In *Proceedings of the Tenth International Symposium on Logical Formalization on Commonsense Reasoning (Commonsense 2011)*, 2011.

43. Kadir Haspalamutgil, Can Palaz, Tansel Uras, Esra Erdem and Volkan Patoglu. Bilişsel Montaj Planlama ve İcra Takibi. In *Proceedings of Otomatik Kontrol Turk Milli Komitesi Otomatik Kontrol Ulusal Toplantisi*, 2010.

42. Halit Erdogan, Olivier Bodenreider and Esra Erdem. Exploiting UMLS Semantics for Checking Semantic Consistency among UMLS concepts. In *Proceedings of the Thirteenth International Congress on Medical Informatics (MedInfo'10)*, 2010.

41. Kadir Haspalamutgil, Can Palaz, Tansel Uras, Esra Erdem and Volkan Patoglu. A Tight Integration of Task Planning and Motion Planning in an Execution Monitoring Framework. In *Proceedings of AAAI'10 Workshop, Bridging The Gap Between Task And Motion Planning (BTAMP'10)*, 2010

40. Duygu Cakmak, Esra Erdem and Halit Erdogan. Computing Weighted Solutions in ASP: Representation-Based Method vs. Search-Based Method. In *Proceedings of Knowledge Representation and Automated Reasoning International Workshop (RCRA'10)*, 2010.

39. Tansel Uras and Esra Erdem. Genome Rearrangement and Planning: Revisited. In *Proceedings of the Twentieth International Conference on Automated Planning and Scheduling (ICAPS'10)*, 2010.

38. Halit Erdogan, Umut Oztok, Yelda Erdem and Esra Erdem. Querying Biomedical Ontologies in Natural Language using Answer Set Programming. In *Proceedings of the Third International Workshop on Semantic Web Applications and Tools for Life Sciences (SWAT4LS'10)*, 2010.

37. Halit Erdogan, Olivier Bodenreider and Esra Erdem. Finding Semantic Inconsistencies in UMLS using Answer Set Programming. In *Proceedings of the Twenty-Fifth AAAI Conference on Artificial Intelligence (AAAI'10)*, 2010.

36. Tansel Uras and Esra Erdem. Genome Rearrangement: A Planning Approach. In *Proceedings of the Twenty-Fifth AAAI Conference on Artificial Intelligence (AAAI'10)*, 2010.

35. Mehmet Celik, Halit Erdogan, Firat Hamit Tahaoglu, Tansel Uras, and Esra Erdem. Comparing ASP and CP on Four Grid Puzzles. In *Proceedings of Knowledge Representation and Automated Reasoning International Workshop (RCRA'09)*, 2009.

34. Ozan Caldiran, Kadir Haspalamutgil, Abdullah Ok, Can Palaz, Esra Erdem, and Volkan Patoglu. Robot Kontrolu icin Mantiksal Akil Yurutme. In *Proceedings of Otomatik Kontrol Turk Milli Komitesi Otomatik Kontrol Ulusal Toplantisi*, 2009.

33. Ozan Caldiran, Kadir Haspalamutgil, Abdullah Ok, Can Palaz, Esra Erdem, and Volkan Patoglu. From Discrete Task Plans to Continuous Trajectories. In *Proceedings of ICAPS'09 Workshop, Bridging The Gap Between Task And Motion Planning (BTAMP'09)*, 2009.

32. Esra Erdem. PHYLO-ASP: Phylogenetic Systematics with Answer Set Programming. In *Proceedings of the Tenth International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR'09)*, pages 567–572, 2009.

31. Esra Erdem, Ozan Erdem, and Ferhan Ture. HAPLO-ASP: Haplotype Inference using Answer Set Programming. In *Proceedings of the Tenth International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR'09)*, pages 573–578, 2009.

30. Duygu Cakmak, Esra Erdem, and Halit Erdogan. Computing Weighted Solutions in Answer Set Programming. In *Proceedings of the Tenth International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR'09)*, pages 416–422, 2009.

29. Ozan Caldiran, Kadir Haspalamutgil, Abdullah Ok, Can Palaz, Esra Erdem, and Volkan Patoglu. Bridging the Gap between High-Level Reasoning and Low-Level Control. In *Proceedings of the Tenth International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR'09)*, pages 342–354, 2009.

28. Thomas Eiter, Esra Erdem, Halit Erdogan, and Michael Fink. Finding Similar or Diverse Solutions in Answer Set Programming. In *Proceedings of the Twenty-Fifth International Conference on Logic Programming (ICLP'09)*, pages 342–356, 2009.

27. Esra Erdem and Reyyan Yeniterzi. Transforming Controlled Natural Language Biomedical Queries into Answer Set Programs. In *Proceedings of the Workshop on BioNLP (BioNLP'09)*, pages 117-124, 2009.

26. Olivier Bodenreider, Zeynep H. Coban, Mahir C. Doganay, Esra Erdem and Hilal Koşucu. A Preliminary Report on Answering Complex Queries related to Drug Discovery using Answer Set Programming. In *Proceedings of the Third International Workshop on Applications of Logic Programming to the (Semantic) Web and Web Services (ALPSWS'08)*, pages 85–90, 2008.

25. Elvin Coban, Esra Erdem and Ferhan Ture. Comparing ASP, CP, ILP on two Challenging Applications: Wire Routing and Haplotype Inference. In *Proceedings of the Second International Workshop on Logic and Search (LaSh'08)*, 2008.

24. Esra Erdem and Ferhan Ture. Efficient Haplotype Inference with Answer Set Programming. In *Proceedings of the Twenty-Third AAAI Conference on Artificial Intelligence (AAAI'08)*, pages 436–441, 2008.

23. Ferhan Ture and Esra Erdem. Efficient Haplotype Inference with Answer Set Programming. In *Proceedings of the Twenty-Third AAAI Conference on Artificial Intelligence (AAAI'08)*, pages 1834-1835, 2008.

22. Merve Caylı, Ayse Gul Karatop, Emrah Kavlak, Hakan Kaynar, Ferhan Ture and Esra Erdem. Solving Challenging Grid Puzzles with Answer Set Programming. In *Proceedings of the Fourth International Workshop on Answer Set Programming (ASP'07)*, pages 175–190, 2007.

21. Esra Erdem and Paolo Ferraris. Forgetting Actions in Domain Descriptions. In *Proceedings of the Twenty-Second AAAI Conference on Artificial Intelligence (AAAI'07)*, pages 409–414, 2007.

20. Thomas Eiter, Esra Erdem, Wolfgang Faber. On Reversing Actions: Algorithms and Complexity. In *Proceedings of the Twentieth International Joint Conference on Artificial Intelligence (IJCAI'07)*, 2007.

19. Thomas Eiter, Esra Erdem, Michael Fink, and Jan Senko. Comparing Action Descriptions based on Semantic Preferences. In *Proceedings of the Tenth European Conference on Logics in Artificial Intelligence (JELIA'06)*, Lecture Notes in Computer Science, Vol. 4160, pages 124–137, 2006.

18. Esra Erdem and Alfredo Gabaldon. Representing Action Domains with Numeric-Valued Fluents. In *Proceedings of the Tenth European Conference on Logics in Artificial Intelligence (JELIA'06)*, Lecture Notes in Computer Science, Vol. 4160, pages 151–163, 2006.

17. Thomas Eiter, Esra Erdem, Michael Fink, and Jan Senko. Resolving Conflicts in Action Descriptions. In *Proceedings of the Seventeenth European Conference on Artificial Intelligence (ECAI'06)*, pages 424–433, 2006.

16. Thomas Eiter, Esra Erdem, Michael Fink, and Jan Senko. Comparing Action Descriptions based on Semantic Preferences. In *Proceedings of ECAI'06 Multidisciplinary Workshop on Advances in Preference Handling*, 2006.

15. Thomas Eiter, Esra Erdem, Michael Fink, and Jan Senko. Resolving Conflicts in Action Descriptions. In *Proceedings of the Eleventh Workshop on Nonmonotonic Reasoning (NMR'06), Action and Change Track*, pages 353–361, 2006.

14. 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.

13. 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.

12. Thomas Eiter, Esra Erdem, Michael Fink, and Jan Senko. Updating Action Domain Descriptions. In *Proceedings of the Nineteenth International Joint Conference on Artificial Intelligence (IJCAI'05)*, pages 418–423, 2005.

11. Esra Erdem and Alfredo Gabaldon. Cumulative Effects of Concurrent Actions on Numeric-Valued Fluents. In *Working Notes of the Sixth Workshop on Nonmonotonic Reasoning, Action, and Change (NRAC'05)*, pages 28–33, 2005.

10. 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)*, Lecture Notes in Computer Science, Vol. 3350, pages 37–51, 2005.

9. 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)*, Lecture Notes in Computer Science, Vol. 3132, pages 386–399, 2004.

8. 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.

7. 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)*, Lecture Notes in Computer Science, Vol. 2562, pages 160–176, 2003.

6. Esra Erdem and Vladimir Lifschitz. Fages' Theorem for Programs with Nested Expressions. In *Proceedings of the Seventeenth International Conference on Logic Programming (ICLP'01)*, Lecture Notes in Computer Science, Vol. 2237, pages 242–254, 2001.

5. 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.

4. 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.

3. 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)*, Lecture Notes in Computer Science, Vol. 1861, pages 822–836, 2000.

2. 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.

1. 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)*, Lecture Notes in Computer Science, Vol. 1730, pages 107–116, 1999.

ABSTRACTS AND POSTERS

7. Esra Erdem and Halit Erdogan. PHYLO-ASP: Phylogenetic Systematics with Answer Set Programming. In *Proceedings of the Sixth International Symposium on Health Informatics and Bioinformatics (HIBIT'11)*, 2011.

6. Esra Erdem and Tansel Uras. Genome Rearrangement with AI Planning. In *Proceedings of the Sixth International Symposium on Health Informatics and Bioinformatics (HIBIT'11)*, 2011.

5. Esra Erdem, Yelda Erdem, Halit Erdogan, and Umut Oztok. Querying Biomedical Ontologies in Natural Language using Answer Set Programming. In *Proceedings of the Sixth International Symposium on Health Informatics and Bioinformatics (HIBIT'11)*, 2011.

4. Ozan Caldiran, Kadir Haspalamutgil, Abdullah Ok, Can Palaz, Esra Erdem, and Volkan Patoglu. From High-Level Reasoning to Low-Level Control. In *RSS'09 Workshop, Bridging the Gap between High-Level Discrete Representations and Low-Level Continuous Behaviors*, 2009.

3. Zeynep H. Coban, Mahir C. Doganay, Esra Erdem and Hilal Kosucu. A New Approach to Integrating Biomedical Ontologies and Answering Complex Queries related to Drug Discovery. In *Proceedings of the Third International Symposium on Health Informatics and Bioinformatics (HIBIT'08)*, 2008.

2. Esra Erdem and Ferhan Ture. Efficient Haplotype Inference with Answer Set Programming. In *Proceedings of the Third International Symposium on Health Informatics and Bioinformatics (HIBIT'08)*, 2008.

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

OTHER

8. Esra Erdem. Finding Answers and Generating Explanations for Complex Biomedical Queries using Answer Set Programming. *In Association for Logic Programming Newsletter*, 2011.

7. Agostino Dovier and Esra Erdem. Successful Applications of Answer Set Programming. *In Association for Logic Programming Newsletter*, 2009.

6. Thomas Eiter, Esra Erdem, and Wolfgang Faber. Diagnosing Plan Execution Discrepancies in a Logic-Based Action Framework. Technical Report INFSYS RR-1843-04-03, Vienna University of Technology, 2004.

5. Thomas Eiter, Esra Erdem, and Wolfgang Faber. Undoing the Effects of Action Sequences. Technical Report INFSYS RR-1843-04-05, Vienna University of Technology, 2004.

4. 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.

3. Esra Erdem. Applications of Logic Programming to Planning: Computational Experiments. At URL `http://people.sabanciuniv.edu/~esraerdem/experiments/experiments.html`, 1999.

2. 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.

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