

Hasan Davulcu

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- EDUCATION
- ◇ **SUNY at Stony Brook**, Stony Brook, NY.
Ph.D. in Computer Science, December, 2002.
 - *Specialization*: Information Integration, Deductive Databases, Workflow Systems.
 - Advisors: Michael Kifer, and I.V. Ramakrishnan
 - Dissertation title: *A Game Logic for Workflows of Non-cooperative Services*
 - ◇ **SUNY at Stony Brook**, Stony Brook, NY.
M.S. in Computer Science, December, 1995.
 - ◇ **Middle East Technical University (METU)**, Ankara, Turkey.
B.S. in Mathematics, June, 1993 with 2nd ranking out of 160 graduates.
 - ◇ **Awards & Fellowships**
 - Best Paper Runner-Up, World Wide Web Conference (WWW'2004)
 - First Prize, Intel+UC Berkeley Technology Entrepreneurship Challenge, ASU
 - Long Island Software Award, for Intelligent Agent Systems, XSB Inc, NY. (2002)
 - Catacosinos Fellowship for Excellence in Computer Science, Stony Brook Research Foundation, Stony Brook, NY, USA (1998-99)
 - Fulbright Full Scholarship for M.S. in Computer Science, Cyprus-American Scholarship Program, Cyprus and USIA, USA (1993 - 95)
- SELECTED RESEARCH INTERESTS
- Service science management and engineering; Virtual organizations and sociotechnical systems; Declarative policy based adaptive services composition; Information extraction; Information retrieval; Information integration; Web and text mining; Multi-ontology and complex relations; Social Networks; Personalization and Recommendation systems.
- ACADEMIC AND INDUSTRIAL EXPERIENCE
- ◇ **Associate Professor, Arizona State University**, August 2009 - Present
Department of Computer Science and Engineering, P.O. Box 878809 Tempe, AZ
 - ◇ **Assistant Professor, Arizona State University**, August 2002 - August 2009
Department of Computer Science and Engineering, P.O. Box 878809 Tempe, AZ
 - Undergraduate Courses Taught:
 - ASU 101 The ASU Experience (Sp09)
 - CSE 205 Concepts of Computer Science and Data Structures (Sp08)
 - CSE 412 Database Management (Sp03, F03, Sp05, F05, Sp06, Sp07)
 - CSE 494 Introduction to Data Mining (F04)
 - CSE 485 Computer Science Capstone Project I (F06, F07, Sp08, Sp09)
 - CSE 486 Computer Science Capstone Project II (F06, Sp07, F07, F08)
 - Graduate Courses Taught:
 - CSE 591 Semantic Web Mining (F02, Sp04, Sp05, F05)
 - ◇ **VP of Technology, XSB Inc**, August 1998 - August 2002, Stony Brook, NY
 - ◇ **Consultant, Bell Labs, Lucent Technologies**, June 1997 - August 1998, NJ

RESEARCH
PROJECTS◇ **Sponsored Research - External Grants**

1. **DOD-MINERVA**, “Funding Allies for the War of Words: Mapping the Diffusion and Influence of Counter-Radical Muslim Discourse,” PI: Woodward, Co-PI: Jacobson, Taylor, Corman, and H. Davulcu (20%), \$5,886,813, 4/01/2009 - 03/31/14.
2. **NSF-National Science Foundation**, “MAISON: Middleware for Accessible Information Spaces on NSDL,” PI: Candan, Co-PI: Sundaram, Hedgpeth and H. Davulcu (20%), \$499,922, 1/1/2008 - 12/31/2009.
3. **NSF-National Science Foundation**, “CAREER: A Logic-Based Dynamic Policy Model for Adaptive Workflow Management,” PI: H. Davulcu (100%), \$413,112, 03/01/2007 - 02/28/2012.
4. **Andrew W. Mellon Foundation**, “Digital Antiquity: Planning a Digital Information Infrastructure for Archaeology,” PI: Kintigh, Co-PI: Candan, Kambhampati Spielmann, Nelson and H. Davulcu (5%), \$21,295, 7/1/2007-6/30/2008.
5. **NSF-National Science Foundation**, “AOC: Archaeological Data Integration for the Study of Long-Term Human and Social Dynamics,” PI: Kintigh, Co-PI: Candan, Kambhampati Spielmann, Nelson and H. Davulcu (12%), \$749,985, 09/01/06 - 08/31/09.
6. **DOD-Office of Naval Research (ONR)**, “MURI: Adaptable Situation-Aware Secure Service-Based (AS3) Systems,” PI: Yau, Co-PI: Mukhopadhyay and H. Davulcu (20%), \$992,834, 07/03/2004 - 07/01/2006.
7. **NSF-National Science Foundation**, “Enabling the Study of Long-Term Human and Social Dynamics: A Cyberinfrastructure for Archaeology,” PI: Kintigh, Co-PI: Candan, Kambhampati Spielmann, Nelson and H. Davulcu (5%), \$100,000, 9/15/2004 - 8/31/2006.
8. **DOD-US Army**, “A System for Discovering Bioengineered Threats By Knowledge Base Driven Mining of Toxin Data,” PI: H. Davulcu, (100%), \$115,639, 12/31/2003 - 7/31/2005.
9. **NAU**, “AZTEC: Arizona Teacher Excellence Coalition: A Statewide Partnership,” PI: H. Davulcu, (100%), \$15,484, 01/20/2004 - 08/22/2004.

◇ **Sponsored Research - Internal Grants**

1. **Prop 301 (ASU Research Initiative)**, “A Broad Program on Enabling Technologies for Intelligent Information Integration,” PI:Kambhampati, Co-PI: Baral, Liu, Sen, Konjevod, H. Davulcu, (10%), \$99,804, 10/30/2001 - 06/31/2002.

◇ **Pending Research Proposals**

1. **NSF-National Science Foundation**, “NSCC/LA: Contesting Islamisms in Global Context” PI: Woodward, Co-PI: Umar, Jacobson, Corman and H. Davulcu, (25%), \$4,115,792, 06/19/09 - 06/18/13.
2. **NSF-National Science Foundation**, “III: Medium: CEDI: Context and Exploration Driven Integration: How to Avoid ”One Size Fits All” in Integrative Research” PI: Candan, Co-PI: Kintigh, Nelson, Spielmann and H. Davulcu, (20%) \$1,199,156, 9/01/09 - 8/31/12.
3. **NIH-National Institutes of Health**, “Data Mining and High Throughput Biological Validation of Associations between Drugs, Genes, Pathways and Diseases” PI: Dinu, Co-PI: H. Davulcu, (50%), \$552,069, 06/15/09 - 06/18/11.
4. **DOD-AFOSR**, “Behavioral Modeling of Religio-Ethnic Groups in Iran and Their Influence in the Conflicts in Iraq and Afghanistan,” PI: Sen, Co-PI: Demaine, Kittrie, H. Davulcu (33%), \$750,453, 1/1/2009 - 12/31/2011. [**Invited Proposal**]

PUBLICATIONS ◇ **Refereed Journal Articles**¹

1. **Vadrevu, S., Gelgi F.**, Davulcu, H., 2007, Information Extraction from Web Pages using Presentation Regularities and Domain Knowledge, *World Wide Web*, **10**(2), pp. 157-179.
2. Yau S.S., Davulcu H, Mukhopadhyay S, **Huang D., Gong H., Singh P., Gelgi F.**, 2007, Automated Situation-Aware Service Composition in Service-Oriented Computing, *International Journal of Web Services Research on Services Engineering (JWSR)*, **4**(4), pp. 59-82.
3. **Vadrevu S., Gelgi F., Nagarajan S.**, Davulcu H., 2006, Gathering Metadata and Instances from Object Referral Lists on the Web, *Online Information Review*, **30**(3), pp.278-296.
4. **Nguyen H. V.**, Davulcu H., **Ramachandran V.**, 2006, Boosting Item Findability: Bridging the Semantic Gap between Search Phrases and Item Descriptions, *International Journal of Intelligent Information Technologies (IJIT)* **2**(3), pp. 1-20.
5. Davulcu H., **Vadrevu S., Nagarajan S.**, 2005, OntoMiner: Automated Metadata and instance Mining from News Websites. *The International Journal of Web and Grid Services (IJWGS)*, **1**(2), pp. 196-221.
6. Davulcu H., **Vadrevu S., Nagarajan S.**, Ramakrishnan I.V., 2003, OntoMiner: Bootstrapping and Populating Ontologies From Domain Specific Web Sites, *IEEE Intelligent Systems*, **18**(5), pp. 24-33.

◇ **Refereed Conference Papers**²

1. **Ahmed S. T.**, Davulcu H., Baral C., 2008, Extracting Protein-Protein Interactions from MEDLINE Using Syntactic Roles, *Proc. of the IEEE International Conference on Bioinformatics and Biomedicine (BIBM'08)*, pp. 473-479 .
2. **Singh P., Gelgi F.**, Davulcu H., Yau S.S., Mukhopadhyay S., 2008, A Risk Reduction Framework for Dynamic Workflows, *Proc. of the IEEE International Conference on Services Computing (SCC'08)*, pp. 134-143
3. **Nguyen, H.**, Davulcu, H., 2008, Mining Search-Phrase Definition from Item Descriptions, *Proc. of the 24th IEEE International Conference on Data Engineering (ICDE'08)* pp. 1346-1348
4. **Gelgi, F.**, Davulcu, H., 2007, Baum-Welch Style EM Approach on Simple Bayesian Models for Web Data Annotation, *Proc. of the IEEE/WIC/ACM International Conference on Web Intelligence (WI'07)*, pp. 736-742
5. **Gelgi, F., Vadrevu, S.**, Davulcu, H., 2007, Fixing Weakly Annotated Web Data using Relational Models, *Proc. of the 7th International Conference on Web Engineering (ICWE'07)*, pp. 385-399
6. **Gelgi, F., Vadrevu, S.**, Davulcu, H., 2007, Relational Model Based Annotation of Web Data, *Poc. of the 5th Atlantic Web Intelligence Conference (AWIC'07)*, pp. 124-129
7. **Gelgi, F.**, Davulcu, H., **Vadrevu, S.**, 2007, Term Ranking for Clustering Web Search Results, *Proc. of the Tenth International Workshop on the Web and Databases (WebDB'07)*, pp. 20-26
8. **Gelgi, F., Vadrevu, S.**, Davulcu, H., 2007, ScubaDiver: Subspace Clustering of Web Search Results, *Proc. of the 3rd International Conference on Web Information Systems and Technologies (WebIST'07)*, pp. 35-40

¹Student participants in bold

²Student participants in bold

9. **Ahmed S.T., Vadrevu S.**, Davulcu H., 2006, DataRover: An Automated System for Extracting Product Information from Online Catalogs, *Proc. of the 4th IEEE Atlantic Web Intelligence Conference (AWIC'06)*, pp. 34-43.
10. Yau S.S., **Huang D., Gong H.**, Davulcu H., 2005, Situation-Awareness for Adaptive Coordination in Service-Based Systems, *Proc. of the 29th Annual International Computer Software and Applications Conference (COMPSAC'05)*, pp. 107-112.
11. Davulcu H., **Nguyen H.V., Ramachandran V.**, 2005, Boosting Item Findability: Bridging the Semantic Gap between Search Phrases and Item Information, *Proc. of the 7th International Conference on Enterprise Information Systems (ICEIS'05)*, pp. 48-55
12. Yau S.S., Davulcu H., Mukhopadhyay S., **Huang D., Yao Y.**, 2005, Adaptable Situation-Aware Secure Service-Based (AS3) Systems, *Proc. of the 8th IEEE International Symposium on Object-oriented Real-time distributed Computing (ISORC'05)*, pp. 308-315
13. **Vadrevu, S., Gelgi F.**, Davulcu, H., 2005, Semantic Partitioning of Web Pages, *Proc. of the 6th International Conference on Web Information Systems Engineering (WISE'05)*, pp. 107-118
14. **Gelgi, F., Vadrevu S.**, Davulcu, H., 2005, Improving Web Data Annotations with Spreading Activation, *Proc. of the 6th International Conference on Web Information Systems Engineering (WISE'05)*, pp. 95-106
15. **Vadrevu, S., Gelgi, F.**, Davulcu H., 2005, Automated Metadata and Instance Extraction from News Web Sites, *IEEE/WIC/ACM International Conference on Web Intelligence (WI'05)*, pp. 38-41
16. **Aswath D., Ahmed S.T., D'Cunha J.**, Davulcu H., 2005, Boosting Item Keyword Search with Spreading Activation, it IEEE/WIC/ACM International Conference on Web Intelligence (WI'05), pp. 704-707
17. Lacroix Z., **Parekh K.**, Davulcu H., Ramakrishnan I.V., **Julasana N.**, 2004, Automating the Biological Data Collection Process with Agents, *Proc. of IEEE Computer Society Computational Systems Bioinformatics Conference (CSB'04)*, pp. 489-499
18. Davulcu H., Kifer M., Ramakrishnan I.V., 2004, CTR-S: A Logic for Specifying Contracts in Semantic Web Services. *Proc. of the International World Wide Web Conference (WWW'04)*, pp. 144-153 [**Best Paper Runner-Up**]
19. **Julasana N., Khandelwal A., Lolage A., Singh P., Vasudevan P.**, Davulcu H., Ramakrishnan I.V., 2004, WinAgent: A System for Creating and Executing Personal Information Assistants Using a Web Browser, *Proc. of the 9th international conference on Intelligent User Interfaces (IUI'04)*, pp. 356 - 357
20. **Nguyen H., Velamuru P., Kolippakkam D.**, Davulcu H., Liu H., 2003, Mining "Hidden Phrase" Definitions from the Web, *Proc. of the 5th Asia Pacific Web Conference (APWeb'03)*, pp. 156-165
21. Davulcu H., Mukherjee S., Ramakrishnan I.V., 2002, Extraction Techniques for Mining Services from Web Sources, *Proc. of the IEEE International Conference on Data Mining (ICDM'02)*, pp. 601 - 604
22. Davulcu H., Mukherjee S., Ramakrishnan I.V., 2002 A Clustering Technique for Mining Data from Text Tables, *Proc. of SIAM International Conference on Data Mining (ICDM'02)*.
23. Davulcu H., Kifer M., Yang G., Ramakrishnan I.V., 2000, Design and Implementation of the Physical Layer in WebBases: The X Rover Experience. *6th International Conference in Rules and Objects in Databases (DOO'00)*, pp. 1094-1105

24. Davulcu H., Kifer M., Yang G., Ramakrishnan I.V., 2000, Computational Aspects of Resilient Data Extraction from Semistructured Sources, *Proc. of the ACM Symposium on Principles of Database Systems (PODS'00)*, pp. 136-144.
25. Davulcu H., Freire J., Kifer M., Ramakrishnan I.V., 1999, A Layered Architecture for Querying Dynamic Web Content. *Proc. ACM International Conference on Management of Data (SIGMOD'99)*, pp. 491-502.
26. Davulcu H., Kifer M., Ramakrishnan C.R., Ramakrishnan I.V., 1998, Logic Based Modeling and Analysis of Workflows, *Proc. of the ACM Symposium on Principles of Database Systems (PODS'98)*, pp. 25-33.

◇ **Book Chapters**³

1. S. S. Yau, S. Mukhopadhyay, H. Davulcu, **D. Huang, R. Bharadwaj, and K. Shenai** Rapid Development of Adaptable Situation-Aware Service-based Systems, *Service-Oriented Architecture in Industries: Best Practices (Advances in Web Services Research)* Liang-Jie Zhang (Editor), Information Science Publishing, pp., 1-57.
2. **Nguyen, H.**, Davulcu, H., 2007, On the Problem of Mining Phrase Definition from Item Descriptions, *Advanced Topics in Intelligent Information Technologies and Applications*, Vol 2, IGI Global.
3. **Ahmed S.T., Vadrevu S.**, Davulcu H., 2006, DataRover: An Automated System for Extracting Product Information From Online Catalogs, *In Studies in Computational Intelligence*, Vol. 23, Eds. Last, M., Szczepaniak, P.S., Volkovich, Z., Kandel, A., pp., 86 - 96
4. Mukherjee S., Davulcu H., Kifer M., Senkul P., Yang G, 2003, Logic Based Approaches to Workflow Modeling and Verification *Logics for Emerging Applications of Databases*, pp. 167-202

◇ **Pending Patent**

1. Davulcu, H., Singh, P., Duening T., 2006, A Reward Driven Online Suggestion System with User Generated Tags as a Bridge To Recommended Links

STUDENTS

PhD Dissertations Awarded:

1. **Student: Fatih Gelgi, Date: June 2007**
Title: "Effective Use Of Term Relationships In Web Content Mining"
2. **Student: Srinivas Vadrevu, Date: June 2008**
Title: "Automated Information Extraction From Web Pages Using Presentation And Domain Regularities"
3. **Student: Hung Nguyen, Date: June 2008**
Title: "Content-Based Mining Of Query Replacements"

PhD Research Projects in Progress:

1. **Syed Ahmed:** "Relationship and Role Extraction from Text",
Expected Completion: Spring 2009
2. **Sukru Tikves:** "Computational Model of Cultural Transmission",
Expected Completion: Spring 2011
3. **Sedat Gokalp:** "Computational Model of Influence Propagation",
Expected Completion: Spring 2011

Masters Thesis Awarded:

1. **Student: Sukumar Koduri, Date: December 2003**
Title: "Data Rover: A Taxonomy Based Web Crawler"

³Student participants in bold

2. **Student: Namita Jain, Date: June 2004**
Title: "Ontology Directed Information Extraction"
3. **Student: Viswanathan Ramachandran, Date: August 2004**
Title: "Text Classification for Bio-Toxin KB"
4. **Student: Deepthi Chidambaram, Date: December 2004**
Title: "Information Extraction from Bio-Medical Abstracts"
5. **Student: Saravanakumar Nagarajan, Date: December 2004**
Title: "Semantic Partition of Web Documents"
6. **Student: Dipti Aswath, Date: August 2005**
Title: "Boosting Item Keyword Search With Spreading Activation"
7. **Student: Syed Ahmed, Date: December 2005**
Title: "Information Extraction From Bio-Medical Text Using Syntactic Roles"
8. **Student: Ravi Bhim, Date: December 2005**
Title: "Surface Realization in Natural Language Generation"
9. **Student: Purvi Savla, Date: June 2006**
Title: "CUREiosity: A Search Log Based Collaborative Recommender System"
10. **Student: Ryan Joshua, Date: June 2007**
Title: "Ontology Matching and Merging"
11. **Student: Alex Newton, Date: June 2008**
Title: "Query Expansion Using Positive And Negative Features"
12. **Student: Bhushan Pendharkar Date: July 2008**
Title: "A System for Classifying and Extracting Product Information from Web Sites"
13. **Student: Sumitha Poornachandran, Date: August 2008**
Title: "Classification of Articles on Religious Violence"
14. **Student: Bhindwale Ruchi Date: October 2008**
Title: "News Thread Extraction based on Event Signatures"
15. **Student: Sushma Dittakavi, Date: December 2008**
Title: "Extracting Semantic Roles for Entity Names from News Articles"

Undergraduate Honors Thesis Awarded:

1. **Student: Joshua Smith, Date: December 2006**
Title: "Extracting Semantic Trees"

Masters Thesis in Progress: Radhika Nair, Chintan Patel, Madhu Ramalingam, Indu Verma, Sasireka Sundaramoorthy, Suvitha Vijayarajan, Sashi Kaladhar Gangaraju, Sai Denduluri, Pradeep Kanwar, Bharadhwaj Narayanan

PROFESSIONAL AFFILIATIONS Association for Computing Machinery (ACM)
Institute of Electrical and Electronics Engineers (IEEE)
Association for the Advancement of Artificial Intelligence (AAAI)

WORKSHOPS ◇ **Co-Chair**, Workshop on Information Integration on the Web held in conjunction with International Conference on Very Large Data Bases (VLDB 2004), 30 August 2004, Toronto (<http://cips.eas.asu.edu/iweb.htm>)

PROFESSIONAL SERVICE ◇ **Reviewer for**
Misc. NSF Proposal Review Panel: IDM (2004), IIS (2005), III (2007), III (2008), Expeditions (2008)

Jour. International Journal of Cooperative Information Systems (IJCIS)
 Theoretical Computer Science (TCS)
 Data and Knowledge Engineering (DKE)
 IEEE Transactions on Knowledge and Data Engineering (TKDE)
 International Joint Conferences on Artificial Intelligence (IJCAI)
 ACM Transactions on Knowledge Discovery from Data (TKDD)
 IEEE Transactions on Services Computing (TSC)

◇ **Conference Program Committee Member**

ACM International Symposium on Practical Aspects of Declarative Languages (PADL 2009)
 SIAM Conference on Data Mining (SDM 2009)
 International Symposium on Computer and Information Sciences (ISCIS2009)
 National Conference on Artificial Intelligence (AAAI 2007)
 International Conference on Data Engineering (ICDE 2007)
 Very Large Data Bases (VLDB 2005)
 Int'l Conf. Ontologies, DataBases, and Applications of Semantics (ODBASE 2005)
 International Semantic Web Conference (ISWC 2004)
 National Conference on Artificial Intelligence (AAAI-04)
 International Conference on Data Engineering (ICDE 2004)

INTERNAL
SERVICE

◇ **Committee Work**

- Member, Ira A. Fulton CEAS Quality of Instruction Committee (2002)
- Chair, Ira A. Fulton CEAS Quality of Instruction Committee (2003)
- Member, SCI Scholarship/TA Committee (2006-Present)
- Member, SCI Graduate Admissions Committee (2002-Present)
- Member, SCI Capstone Course Committee (2007-Present)
- Coordinator, CSE Capstone Courses and Internship Program (2007-Present)