

Dejing Dou

Computer and Information Science
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RESEARCH INTERESTS:

Artificial Intelligence (Specially in Ontology); Data Mining; Data Integration; Medical Informatics and Bioinformatics; the Semantic Web.

EDUCATION:

- 2004 Ph. D. in Artificial Intelligence, Yale University.
Thesis: *Ontology Translation by Ontology Merging and Automated Reasoning*.
Advisor: Drew V. McDermott.
- 2000 M. S. in Electrical Engineering, Yale University.
- 1998-1999 in M. S. Program of Electronic Engineering, Tsinghua University, China.
- 1996 B. E. in Electronic Engineering, Tsinghua University, China.

RESEARCH EXPERIENCE

- **Sep 2004 - current** Assistant Professor, Department of Computer and Information Science, University of Oregon. Conduct Research in the theoretical framework for Ontology-based Integration, Mining and Modeling, and its practical applications, specially in Biomedical data and Networking data.
- **Sep 2000 - Aug 2004** Research Assistant, Department of Computer Science, Yale University. Conducted Research in COABS Grid Based Software Agent Communication, First Order Logic Representation and Reasoning for the Semantic Web, Ontology Integration and Translation on the Semantic Web.
- **Summer 2000** Research Assistant, Department of Computer Science, Yale University. Conducted Research in Radio Communication and Control for Robots in Robocup Project, Participated in Robocup2000 competition in Melbourne, Australia.

- **Sep 1999 - May 2000** Graduate Fellowships, Department of Electrical Engineering, Yale University.
- **Jul 1996 - Jun 1999** Research Assistant&Software Engineer, Electronic Engineering Department, Tsinghua University, China. Conducted Research in Signal Processing Software, Circuit&Electronic Device Design and Graphic User Interface for a Novel Mini-TOFMS System.
- **Sep 1995 - Jun 1996** Senior Student, Electronic Engineering Department, Tsinghua University, China. Conducted a senior project in Software Simulation and Circuit Design on Matching Network for Acoustic Transducers.

TEACHING EXPERIENCE:

- Assistant Professor, University of Oregon:
 - CIS471/571 Introduction to Artificial Intelligence, Winter 2006.
 - CIS453/553 Data Mining, Spring 2005, Spring 2006, Winter 2007, Winter 2008.
 - CIS451/551 Database Processing, Winter 2005, Fall 2005, Fall 2006.
 - CIS410/510 Machine Learning, Spring 2007, Winter 2009.
 - CIS212 Introduction to Computer Science, Spring 2008, Spring 2009.
 - CIS607 Semantic Information Integration (graduate seminar), Fall 2004, Fall 2005, Fall 2006, Winter 2008.
 - CIS607 Data Mining and Data Integration in Bioinformatics (graduate seminar), Winter 2009.
 - DSC433/533 Information Analysis for Managerial Decisions (Invited Course for Department of Decision Sciences in the Lundquist College of Business), Fall 2008.
- Teaching Assistant, Yale University:
 - CS470 Artificial Intelligence (graduate and senior undergraduate class), Fall 2001;
 - CS472 Symbolic Programming (graduate and senior undergraduate class), Fall 2002;
 - CS112 Introduction to Programming(undergraduate class), Spring 2002, Spring 2003;
 - CS201 Introduction to Computer Science(undergraduate class), Fall 2003.
- Mentor for Undergraduate Students, Tsinghua University. Nov. 1995 - Jun. 1999

GRANTS

- NIH/NIBIB R01EB007684 \$2,216,347 5/1/2009 - 4/30/2013
 PI (PI: Dejing Dou, co-Investigators: Gwen Frishkoff, Allen Malony, Don Tucker)
 Neural ElectroMagnetic Ontologies: ERP Knowledge Representation & Integration
 This project studies ontology development and ontology-based integration for ERP data from different EEG labs and data analysis methods.

- NSF CNS-0520326 \$350,000 10/1/05 - 9/30/08
co-PI (PI: Jun Li, co-PI: Dejing Dou and David Meyer)
NeTS-NBD: Internet Routing Forensics – A Framework for Understanding, Monitoring and Detecting Abnormal Border Gateway Protocol Events
This project studies abnormal Border Gateway Protocol events in the internet. We are extending data mining techniques to analyze internet (BGP) data.

HONORS

- A Candidate for Best Research Paper Award of SIGKDD2007.
- One of the best papers from the proceedings of ODBASE2003.
- One of the best papers from the proceedings of OAS2002, OMAS2002 and OAS2003.
- AAAI student travel grant for ISWC2002.
- Graduate Fellowship and Becton Fellowship, Yale University, 1999.
- Excellent Mentor Award (for advising and mentoring undergraduate students), Tsinghua University, China, 1998.

PUBLICATIONS

Journal Papers

Under Review

- Paea LePendu and Dejing Dou 2009. “Ontology Databases” (Under Review) *Journal of Intelligent Information Systems (JIIS)*, 2009. URL: <http://www.cs.uoregon.edu/~dou/research/papers/jiis09.pdf>
- Dejing Dou, Han Qin and Paea LePendu 2009. “OntoGrate: Towards Automatic Integration for Relational Databases and the Semantic Web through an Ontology-based Framework” (Under Review) *International Journal of Semantic Computing (IJSC)*, 2009. URL: <http://www.cs.uoregon.edu/~dou/research/papers/ijsc09.pdf>
- Daya C. Wimalasuriya and Dejing Dou 2009. “Ontology-Based Information Extraction: An Introduction and a Survey of Current Approaches” (Under Review) *Journal of Information Science (JIS)*, 2009. URL: <http://www.cs.uoregon.edu/~dou/research/papers/jis09.pdf>
- Dejing Dou, Jun Li, Han Qin and Sheng Zhong 2008. “Mining and Sharing the Hierarchy of Abnormal BGP Events.” (Under Review) *Knowledge and Information Systems (KAIS)*, 2009. URL: <http://www.cs.uoregon.edu/~dou/research/papers/kais09.pdf>.

- Daya C. Wimalasuriya, Dejing Dou, Sridhar Ramachandran and Paea LePendu 2009. “Ontology-Based Integration for Large Model Organism Databases.” (Under Review) *Journal of Integrative Bioinformatics (JIB)*, 2009. URL: <http://www.cs.uoregon.edu/~dou/research/papers/jib09.pdf>

Published

- Gwen A. Frishkoff, Robert M. Frank, Jiawei Rong, Dejing Dou, Joseph Dien and Laura K. Halderman 2007. “A Framework to Support Automated Classification and Labeling of Brain Electromagnetic Patterns.” *Computational Intelligence and Neuroscience (CIN), Special Issue, EEG/MEG Analysis and Signal Processing*. Volume 7, Number 3, pp. 1-13, 2007.
- Jun Li, Dejing Dou, Zhen Wu, Shiwoong Kim and Vikash Agarwal 2005. “An Internet Routing Forensics Framework for Discovering Rules of Abnormal BGP Events.” *ACM SIGCOMM Computer Communication Review* (acceptance ratio: 25%, 5/20). Volume 35, Number 5, pp. 58-66, October 2005.
- Dejing Dou, Drew McDermott and Peishen Qi 2004 “Ontology Translation on the Semantic Web.” *Journal on Data Semantics*, Volume II, LNCS 3360, Springer-Verlag 2004, pp. 35-57 (invited submission and peer reviewed) (selecting ratio from ODBASE03 papers: 14.8%, 4/27), January, 2005.
- Xue Kun, Dou Dejing, Jin Qiji and Cha Liangzhen 1999 “Novel Portable Mini-TOFMS System.” *Journal of Vacuum, China*, No.4, 1999; pp. 17-21.
- Luo Shuyun, Dou Dejing, Chen Gelin, Hu Sizheng and Wu Xumin 1997 “The Study of Improving Output Signal for Acoustic Microscope Transducers.” *Journal of Tsinghua University (Science and Technology), China*, No.10, 1997; pp. 83-86.

Peer Reviewed Conference Papers

- Daya Wimalasuriya and Dejing Dou 2009. “Using Multiple Ontologies in Information Extraction.” In *Proceedings of the 18th ACM Conference on Information and Knowledge Management (CIKM 2009)* (acceptance ratio: 14.5%, 123/847). pp. 235-244, November, 2009.
- Paea LePendu, Dejing Dou and Doug Howe 2009. “Detecting Inconsistencies in the Gene Ontology using Ontology Databases with Not-gadgets” In *Proceedings of the International Conference on Ontologies, Databases and Application of SEMantics (ODBASE 2009)* (acceptance ratio: 24.6%, 16/65). LNCS 5871, pp. 948-965, November, 2009.
- Gwen Frishkoff, Paea LePendu, Robert Frank, Haishan Liu and Dejing Dou 2009. “Development of Neural Electromagnetic Ontologies (NEMO): Ontology-based Tools for Representation and Integration of Event-related Brain Potentials.” In *Proceedings of the International Conference on Biomedical Ontology (ICBO 2009)*. pp. 31-34, July, 2009.

- Paea LePendou, Dejing Dou, Jiawei Rong and Gwen Frishkoff 2008. “Ontology Database: a New Method for Semantic Modeling and an Application to Brainwave Data.” In *Proceedings of the 20th International Conference on Scientific and Statistical Database Management (SSDBM 2008)* (acceptance ratio: 34.5%, 29/84). LNCS 5069, pp. 313-330, July, 2008.
- Jun Li, Dejing Dou, Shiwoong Kim, Han Qin and Yibo Wang 2007. “On Knowledge-Based Classification of Abnormal BGP Events.” In *Proceedings of International Conference on Information Systems Security (ICISS 2007)* (short paper). LNCS 4812, pp. 267-271, December, 2007.
- Han Qin, Dejing Dou and Paea LePendou 2007. “Discovering Executable Semantic Mappings Between Ontologies.” In *Proceedings of the International Conference on Ontologies, Databases and Application of SEMantics (ODBASE 2007)*. (acceptance ratio: 23.5%, 19/81). LNCS 4803, pp. 832-849, November, 2007.
- Dejing Dou, Gwen Frishkoff, Jiawei Rong, Robert Frank, Allen Malony and Don Tucker 2007. “Development of NeuroElectroMagnetic Ontologies (NEMO): A Framework for Mining Brainwave Ontologies.” In *Proceedings of the 13th ACM International Conference on Knowledge Discovery and Data Mining (KDD’07)*. (acceptance ratio for full presentation: 8%, 40/513). pp. 270-279, August, 2007. (**A Candidate for Best Research Paper Award**).
- Jongwan Kim, Dejing Dou, Haishan Liu and Donghwi Kwak 2007. “Constructing A User Preference Ontology for Anti-spam Mail Systems.” In *Proceedings of the 20th Canadian Conference on Artificial Intelligence (Canadian AI’07)*. (acceptance ratio: 17.7%, 46/260). LNCS/LNAI 4509, pp. 272-283, May, 2007.
- Dejing Dou, Jun Li, Han Qin, Shiwoong Kim and Sheng Zhong 2007. “Understanding and Utilizing the Hierarchy of Abnormal BGP Events.” In *Proceedings of SIAM International Conference on Data Mining 2007 (SDM 2007)* (short paper). (acceptance ratio: 25%, 36(full paper)+39(short paper)/300). pp. 467-472, April, 2007.
- Daya Wimalasuriya, Sridhar Ramachandran and Dejing Dou 2007. “Clustering Zebrafish Genes Based on Frequent-Itemsets and Frequency Levels.” In *Proceedings of Pacific-Asia Conference on Knowledge Discovery and Data Mining 2007 (PAKDD 2007)* (short paper). (acceptance ratio: 17.67%, 34(regular paper)+92(short paper)/730). LNCS 4426, pp. 912-920, May, 2007.
- Dejing Dou and Drew McDermott 2006a. “Deriving Axioms Across Ontologies.” In *Proceedings of International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS’06)* (short paper) (acceptance ratio: 47.6%, [127(full paper)+135(short paper)]/550). pp. 952-954, May, 2006. (We are invited to submit an extended version of this paper to the post-proceedings of DALT 2006.)
- Dejing Dou and Paea LePendou 2006. “Ontology-based Integration for Relational Databases.” In *Proceedings of ACM Symposium on Applied Computing (SAC) 2006 (DBTTA Track)* (acceptance ratio: 32.4%, 300/927). pp. 461-466, April, 2006.

- Dejing Dou and Paea LePendu 2005. “Ontology-based Integration for Relational Data.” In *Proceedings of International Conference on Ontologies, Databases and Applications of Semantics (ODBASE 2005)* (poster paper) (acceptance ratio: 36.8%, [25(full paper)+7(short paper)+10(posters)]/114). LNCS 3762, Springer-Verlag 2005, pp. 35-36, November, 2005.
- Dejing Dou, Drew McDermott, and Peishen Qi 2003. “Ontology Translation on the Semantic Web.” In *Proceedings of International Conference on Ontologies, Databases and Applications of Semantics (ODBASE 2003)* (acceptance ratio: 23.3%, 27/116). LNCS 2888, Springer-Verlag 2003, pp. 952-969, November, 2003. (We are invited to submit an extended version of this paper to *Journal on Data Semantics*.)
- Drew McDermott and Dejing Dou 2002. “Representing disjunction and quantifiers in RDF.” In *Proceedings of International Semantic Web Conference (ISWC 2002)* (acceptance ratio: 30.1%, 40/133). LNCS 2342, Springer-Verlag 2002, pp. 250-263, June, 2002.

Peer Reviewed Workshop Papers

- Haishan Liu and Dejing Dou 2008. “An Exploration of Understanding Data Heterogeneity through Data Mining.” In *Proceedings of KDD’08 Workshop on Mining Multiple Information Sources (ACM MMIS 2008)*. pp. 18-25, August, 2008.
- Jiawei Rong, Dejing Dou, Gwen Frishkoff, Robert Frank, Don Tucker and Allen Malony 2007. “A Semi-automatic Framework for Mining ERP Patterns.” In *Proceedings of the 2007 IEEE International Symposium on Data Mining and Information Retrieval (IEEE DMIR-07)*. pp. 329-334, May, 2007.
- Dejing Dou, Jeff Z. Pan, Han Qin and Paea LePendu 2006. “Towards Populating and Querying the Semantic Web.” In *Proceedings of 2nd International workshop on Scalable Semantic Web Knowledge Base Systems (SSWS 2006)* (acceptance ratio: 60%, 9/15), pp. 129-142, co-located with ISWC 2006, November, 2006.
- Dejing Dou, Paea LePendu, Shiwoong Kim and Peishen Qi 2006. “Integrating Databases into the Semantic Web through an Ontology-based Framework.” In *Proceedings of the third International Workshop on Semantic Web and Databases (SWDB’06)* (acceptance ratio for full paper: 23.8%, 5/21), pp. 54 (Electronic publication, 10 pages), co-located with ICDE 2006, April, 2006.
- Dejing Dou, Drew McDermott, and Peishen Qi 2002 “Ontology Translation by Ontology Merging and Automated Reasoning.” In *Proceedings of EKAW2002 Workshop on Ontologies for Multi-Agent Systems (OMAS 2002)*. pp. 3-18, October, 2002. (We are invited to submit an extended version to a volume of best papers from the proceedings of OAS2002, OMAS2002 and OAS2003.)

Invited Papers

- Dejing Dou and Drew McDermott 2006b. “Towards Theory Translation.” In *Post-Proceedings of The 4th International Workshop on Declarative Agent Languages and Technologies (DAIT 2006)* (invited paper) LNCS/LNAI 4327, Springer-Verlag 2006, pp. 16-28, December, 2006.
- Dejing Dou, Drew McDermott and Peishen Qi 2005b “Ontology Translation by Ontology Merging and Automated Reasoning.” In *Ontologies for Agents: Theory and Experiences*, (Whitestein Series in Software Agent Technologies and Autonomic Computing) (best papers from the proceedings of OAS2002, OMAS2002 and OAS2003), pp. 73-94. March, 2005

Posters

- Haishan Liu, Gwen Frishkoff, Robert Frank and Dejing Dou 2009. “Mapping ERP patterns from heterogeneous datasets: A simulation study.” *Poster in the 15th Annual Meeting of the Organization for Human Brain Mapping*. June, 2009.
- Gwen Frishkoff, Robert Frank, Haishan Liu and Dejing Dou 2008. “Combining top-down and bottom-up methods for ERP pattern classification.” *Poster and Invited Oral Presentation in the 14th Annual Meeting of the Organization for Human Brain Mapping*. June, 2008.
- Jiawei Rong, Dejing Dou, Gwen Frishkoff, Robert Frank, Allen Malony and Don Tucker 2007. “A Semi-automatic Framework for Mining ERP Patterns.” *Poster in the 13th Annual Meeting of the Organization for Human Brain Mapping*. June, 2007.
- Robert Frank, Gwen Frishkoff, Dejing Dou 2007. “An automated system for EM pattern separation, classification, and labeling.” *Poster in the 13th Annual Meeting of the Organization for Human Brain Mapping*. June, 2007.
- Gwen Frishkoff, Dejing Dou, Paea LePendou, Allen Malony and Don Tucker 2006. “The Neural ElectroMagnetic Ontology (NEMO) System: Design and Implementation of a Sharable EEG/MEG Database with ERP ontologies.” *Poster in the 12th Annual Meeting of the Organization for Human Brain Mapping*. June, 2006.
- Dejing Dou, Drew McDermott, and Peishen Qi 2003 “Ontology Translation: Available Today.” In *Posters and Demonstrations of International Semantic Web Conference (ISWC2003)*. pp. 43-44, October, 2003.

STUDENTS and Visiting Scholars

Current Students (Primary Advisor)

- Paea LePendou (Ph.D. Student since 2004, Ph.D. Expected Dec. 2009; NPSC Graduate Research Fellow)
- Han Qin (Ph.D. Student since 2005)

- Daya Wimalasuriya (Ph.D. student since 2007, Fulbright Masters Student 2005-2007)
- Haishan Liu (Ph.D. Student since 2006)
- David Lebech (Fulbright Masters Student since 2008)
- Fernando Gutierrez (Ph.D. Student since 2009)

Former Students (Primary Advisor)

- Brad Pitcher (MS'09), Jiawei Rong (MS'08), Jigme Tenzing (MS'08), Daya Wimalasuriya (MS'07), Amanda Hosler (BS'06 with honor thesis), Mike Matloff (BS'06), Shiwoong Kim (MS'06), Vikash Agarwal (MS'05), Darren Brown, Donghwi Kwak

Visiting Scholars (Primary Advisor)

- Changwan Lee (visiting scholar from DongGuk University, Korea; 2008-2010)
- Jongwan Kim (visiting scholar from Daegu University, Korea; 2006-2008)

Other Students (Committee Member)

- Peter Boothe, John Frishkio-Lasseter (Ph.D.'06), Kai Li (Ph.D.'07), Jeremy Ludwig (Ph.D.'08), Adnan Salman, Victor Hanson-Smith, Mahshid Yar Mohammadi

ACADEMIC ACTIVITIES:

Program Chairs

- Program chairs for the Second International Symposium on Data, Privacy, & E-Commerce (ISDPE 2010), Buffalo/Niagara Fall, New York, USA. June, 2010

Program Committees

- Program committee member for 21th International Conference on Database and Expert Systems Applications (DEXA) 2010, August/September, 2010.
- Program committee member for ICDM-09 Workshop on Mining Multiple Information Sources (MMIS), December, 2009.
- Program committee member for the IEEE International Conference on Data Mining (ICDM) 2009, December, 2009.
- Program committee member for the IEEE International Performance Computing and Communication Conference (IPCCC) 2009, December, 2009.
- Program committee member for International Conference on Knowledge Discovery and Information Retrieval (KDIR) 2009, October, 2009.

- Program committee member for 20th International Conference on Database and Expert Systems Applications (DEXA) 2009, August/September, 2009.
- Program committee member for SIAM International Conference on Data Mining (SDM) 2009, April/May, 2009.
- Program committee member for Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD) 2009, April, 2009.
- Program committee member for 2009 IEEE-GrC (Granular Computing Conference), August, 2009.
- Program committee member for the Research Track of ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD) 2008, August, 2008.
- Program committee member for KDD-08 Workshop on Mining Multiple Information Sources, August, 2008.
- Program committee member for European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML/PKDD) 2008, September, 2008.
- Program committee member for SIAM International Conference on Data Mining (SDM) 2008, April, 2008.
- Program committee member for WWW 2008 Posters, April, 2008.
- Program committee member for International Conference on Computational Intelligence and Security (CIS), December, 2008.
- Program committee member for 2008 IEEE-GrC (Granular Computing Conference), August, 2008.
- Program committee member for 2008 AAI Spring Symposium Series on Semantic Scientific Knowledge Integration (SSKI 2008), March, 2008.
- Program committee member for 2007 IEEE-GrC (Granular Computing Conference), November, 2007.
- Program committee member for the First International Symposium on Data, Privacy, and E-Commerce (ISDPE'07), August, 2007.
- Program committee member for the AAI'07 Workshop on Semantic E-Science, July, 2007.
- Co-Founder of an International Consortium for EEG/ERP Ontology Development and Data Sharing, October, 2006.
- Program committee member for 2006 IEEE-GrC (Granular Computing Conference), May, 2006.
- Program committee member for 2005 IEEE-ICDM Workshop on MultiAgent Data Warehousing and MultiAgent Data Mining, October, 2005.

Grant Proposal Review

- Panelist for NSF CDI, February, 2008.
- Panelist for NSF IIS, February, 2008.
- Panelist for NSF IIS, June, 2007.
- Panelist for NSF OCI, April, 2007.
- Grant Review for Louisiana Board of Regents, December, 2008;
- Grant Proposal Review as a suggested Expert for The Netherlands Organization for Scientific Research (NWO), February, 2007.

Paper Review for journals and conferences

- Paper review for the IEEE Transactions on Systems, Man and Cybernetics - Part A, October, 2009
- Paper review for Journal of Knowledge and Information Systems (KAIS), October, 2009
- Paper review for Journal of Intelligent Information Systems (JIIS), September, 2009
- Paper review for the IEEE Transactions on Systems, Man and Cybernetics - Part B, August, 2009
- Paper review for Data & Knowledge Engineering (DKE) Journal, July, 2009
- Paper review for Journal of Intelligent Information Systems (JIIS), June, 2009
- Paper review for Data & Knowledge Engineering (DKE) Journal, May, 2009
- Paper review for Statistical Analysis and Data Mining (SAM) Journal, May, 2008
- Paper review for Data & Knowledge Engineering (DKE) Journal, November, 2007
- Paper review for Journal of Biomedical Informatics (JBI), October, 2007
- Paper review for the IEEE Transactions on Knowledge and Data Engineering (TKDE), May, 2007
- Paper review for the IEEE Transactions on Systems, Man, and Cybernetics–Part C: Applications and Reviews, January, 2006
- Paper review for International Journal of Data Mining and Bioinformatics, December, 2005.
- Paper review for International Journal on Semantic Web and Information Systems, December, 2004.
- Paper review for WWW2003 Semantic Web track, December, 2002.

Invited Talks

- Invited talk *Development of NeuroElectroMagnetic Ontologies (NEMO): A Framework for Mining and Modeling Brainwave Data Ontologies* at Division of Biomedical Computer Science (BMCS), Oregon Health & Science University, Beaverton, OR, April, 2009.
- Invited talk *Development of NeuroElectroMagnetic Ontologies (NEMO): A Framework for Mining and Modeling Brainwave Ontologies* at Brain-Computer Interfaces Group, Microsoft Research, Redmond, WA, November, 2007.
- Invited talk *Ontology Translation on the Semantic Web* at Database Research Group, University of Washington, Seattle, WA, May, 2004.
- Invited talk *Two issues on Logic Representation and Ontology Translation* at University of Rome (ISTC-CNR), Rome, Italy, June, 2002.

Others

- Yale team member for small size group Robocup competition in Robocup2000, Melbourne, Australia, September, 2000.

University ACTIVITIES:

- Senator, UO InterInstitutional Faculty Senate (IFS), 2009-2012.
- Organizer, UO Computer and Information Science Colloquium, 2005-2006, 2009-2010.
- Member, Graduate Education Committee (GEC), UO Computer and Information Science, 2004-2005, 2006-2007, 2007-2008, 2008-2009, 2009-2010.