

Yihong Ding

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Education:

Brigham Young University, Provo, Utah, USA

Degrees: PhD, MS.

Cumulative GPA: 3.9/4.0

Research Area: semantic annotation, ontology generation, semantic web, web evolution

Advisor: David W. Embley

Dissertation Title: Annotating Documents for the Semantic Web Using Data-Extraction Ontologies

Thesis Title: Semiautomatic Generation of Resilient Data-Extraction Ontologies

Major: Computer Science

Expected Graduation Date: 08/2008

(MS degree received 8/2003)

University of Science and Technology of China, Hefei, China

Degrees: ME, BE.

Master of Engineering received in 7/1997

Major: Mechanical Engineering

Bachelor of Engineering received in 7/1994

Research Area: adsorptive heat pump, solar energy, heat and mass transfer

Advisor: Zhenyan Liu

Thesis Title: Study of Cold Storage Air Conditioning Expert Systems

Research, Teaching, Blogging, and other Work Experiences:

- Research experiences as a computer-science researcher, fall 1999 to Present
 - Semantic annotation for the Semantic Web (PhD dissertation topic). Part of the NSF-funded TANGO project. Bootstrapping a web of data (*Semantic Web*) by automatically adds machine-processable labels to existing web content.
 - Web evolution (a by-product of my PhD research). A project conducted and executed by myself. The theory of *web evolution* is the first attempt in the world on studying the evolutionary aspect of World Wide Web that addresses two fundamental questions---why the Web evolves and how it evolves. Through two postulates and seven corollaries I describe a method to measure web evolution cycles. Though it is debatable and amendable, this theory has caused wide attention among Web researchers and thinkers.

- Active Semantic Space (ASpace, a by-product of my PhD research). A project developed by me and engaged by multiple researchers at BYU and DERI Innsbruck. We proposed *ASpaces* to be potential fundamental building blocks of the Semantic Web. I designed this project during my visiting of DERI Innsbruck on the summer 2006.
- Automatic Web Service Creation (a joint research project). I and another PhD student proposed a new model that is able to directly create *atomic web services* from ontologies and then dynamically compose these atomic services to be compound services based on user specifications.
- Semiautomatic Generation of Ontologies (master thesis topic). Constructing small domain ontologies by semi-automatically reusing a large generic ontology, such as the Mikrokosmos Ontology. Important ontology reuse lessons were learned and published.
- Schema mapping (a joint research project). We presented a new hybrid method to construct *1:1*, *1:n*, and generic *n:m* mappings between two arbitrary schemas. Our method and results were impressive and we were invited to summarize our work in *SIGMOD Record* at 2004.
- Teaching and Mentoring experiences, Brigham Young University (Undergraduate and Graduate Courses) winter 2000 to present.
 - Instructor, *CS652 Information Extraction and Integration: interaction with the semantic web technologies*. In spring 2004, I taught this course with the focus on connecting the traditional information extraction and integration research to the emerging semantic web. This course was co-instructed with Prof. David W. Embley.
 - Teaching Assistant. Tutored students in several undergraduate and graduate courses, including data structure, theory of programming languages (twice), principle of database systems, and advanced database topics. My responsibilities included help students in programming and markup languages such as Scheme, Java, C++, PHP, SQL, RDF, OWL and OSM, grade homework and answer questions.
- Technology Blogging experiences, fall 2006 to present
 - Thinking Space (primary author). *Thinking Space* focuses on blogging innovative thoughts about World Wide Web. Thinking Space was recommended by the top web technology sites to be one of the few must-read blogs on Semantic Web and web evolution.
 - SemanticFocus.com (contributing author). SemanticFocus.com is a premier site on discussing and broadcasting Semantic-Web-related technologies and achievements.
 - Other events. I was invited as a special guest by other premier sites on web technologies.
 - a guest of "Talking with Talis" (a special series that Paul Miller talks with a few most-frontier Web evangelists)
 - a member of ThinkerNet (a highly selective and invitation-only group of Web thinkers)
 - a guest author of Semantic Report (a monthly journal on Web businesses)
- Other experiences, Fall 1999 to present
 - Team working in various teams on multiple academic fields. Fields include such as compiler, operating system, networking protocol implementation, multithread programming, web

- crawler, database, high performance algorithm, and security. Team activities include such as plan design, group discussion, individual and cooperated coding, and team presentation.
 - Intern at DERI Innsbruck (a leading Semantic Web research lab), Innsbruck, Austria, May to August 2006. Working on ontology construction for the MUSING (Multi-Industry Semantics Based Business Intelligence) project, an EU funded multi-institute project.
 - Intern at Novell Inc. Provo UT, April to August 2000. Working on testing and debugging C++ code written by other software engineers at the Internet Cache System Group.
- Working Experiences as a Mechanical Engineer, 1994 to 1997 (more details available upon request)

Publications:

Journals, Conferences, and Workshops

- Yihong Ding, David W. Embley, A New Synergistic Semantic Annotation Model. (In drafting)
- Yihong Ding, David W. Embley, and Stephen W. Liddle, Enrich OWL with Instance Recognition Semantics for Automated Semantic Annotation, In *Proceedings of First International Workshop on Ontologies and Information Systems for the Semantic Web (ONISW 2007) in conjunction with ER 2007*, Auckland, New Zealand, November 2007.
- Yihong Ding, Ying Ding, David W. Embley, Omair Shafiq, and Martin Hepp, Making the Semantic Web a Reality through Active Semantic Spaces, In *Proceedings of Workshop of Bridging the Gap between Semantic Web and Web 2.0 (Semnet 2007) in conjunction with ESWC 2007*, Innsbruck, Austria, June 2007.
- Yihong Ding, Deryle W. Lonsdale, David W. Embley, Martin Hepp, and Li Xu, Generating Domain Ontologies by Examples through Automated Ontology Reuse, In *Proceedings of 12th International Conference on Applications of Natural Language to Information Systems (NLDB 2007)*, Paris, France, June 2007.
- Xia Wang, Yihong Ding, and Yi Zhao, Similarity Measurement about Ontology-based Semantic Web Services, In *Proceedings of Workshop on Semantics for Web Services (SemWS'06) in conjunction with ECOWS 2006*, Zurich, Switzerland, December 2006.
- Yihong Ding, David W. Embley, Ying Ding, and Omair Shafiq, Avoiding Deceptive Annotations in the Semantic Web, In *Proceedings of the First Semantic Authoring and Annotation Workshop (SAAW 2006) in conjunction with ISWC 2006*, CEUR Vol-209, 4 pages, Athens, Georgia, November 2006.
- Cui Tao, Yihong Ding, and Deryle Lonsdale, Automatic Creation of Web Services from Extraction Ontologies, In *Proceedings of the First International Workshop on Semantic Web Applications: Theory and Practice (SemWAT 2006) in conjunction with ER 2006*, LNCS 4231, pp. 415-424, Tucson, Arizona, November 2006.
- Li Xu, David W. Embley, and Yihong Ding, Combining Declarative and Procedural Knowledge to Automate and Represent Ontology Mapping, In *Proceedings of the First International Workshop on Semantic Web Applications: Theory and Practice (SemWAT 2006) in conjunction with ER 2006*, LNCS 4231, pp. 395-404, Tucson, Arizona, November 2006.
- Yihong Ding, David W. Embley, and Stephen W. Liddle, Automatic Creation and Simplified Querying of Semantic Web Content: An Approach Based on Information-Extraction Ontologies, In *Proceedings of the First Asian Semantic Web Conference (ASWC 2006)*, LNCS 4185, September 2006. Pages 400-414.

- Yihong Ding and David W. Embley, Using Data-Extraction Ontology to Foster Automating Semantic Annotation, In *Proceedings of the ICDE 2006 PhD Workshop*, 5 pages, Atlanta, Georgia, April, 2006.
- Yihong Ding, Study of Design Issues on an Automated Semantic Annotation System, *AIS SIGSEMIS Bulletin*, 2(3-4):45-51, July-December 2005.
- Yuri A. Tijerino, David W. Embley, Deryle W. Lonsdale, Yihong Ding, and George Nagy, Towards Ontology Generation from Tables, *World Wide Web Journal*, 8(3):261-285, September 2005.
- David W. Embley, Li Xu, and Yihong Ding, Automatic Direct and Indirect Schema Mapping: Experiences and Lessons Learned, *SIGMOD Record*, 33(4):14-19, December 2004.
- Deryle W. Lonsdale, Yihong Ding, David W. Embley, and Alan Melby, Peppering Knowledge Sources with SALT; Boosting Conceptual Content for Ontology Generation, In *Proceedings of the AAAI Workshop on Semantic Web Meets Language Resources*, pages 30-36, Edmonton, Alberta, Canada, July 28, 2002.

Thesis

- Yihong Ding, Semiautomatic Generation of Resilient Data-Extraction Ontologies, *Master Thesis*, Brigham Young University, Provo, Utah, June 2003.

Technical Report

- David W. Embley, Yihong Ding, Stephen W. Liddle, and Mark Vickers, Automatic Creation and Simplified Querying of Semantic Web Content, *Technical Report*, Brigham Young University, Provo, Utah, September 2005.
- Yihong Ding, Annotating Documents for The Semantic Web Using Data-Extraction Ontologies, *PhD dissertation proposal*, Brigham Young University, Provo, Utah, September 2005.
- Yihong Ding, Semantic Annotation for The Semantic Web: A Research Area Study, *Technical Report*, Brigham Young University, Provo, Utah, September 2005.

Many other thoughtful online articles on web technology review, web business, and web evolution theory and practices. These publications are freely accessible at Thinking Space, Semantic Focus, Semantic Report, ZDNet, and Internet Evolution. A few of them have been read thousands of times and adopted by varied other web sites.

Mechanical Engineering publications: Six publications on Journals and International Conferences.

Professional Activities and Services

- Program Committee Member.
 - The 23rd Annual ACM Symposium on Applied Computing (ACM SAC 2008), Fortaleza, Ceara, Brazil, March, 2008.
 - The 2007 Information Resources Management Association International Conference (IRMA 2007), Vancouver, British Columbia, Canada, May 19-23, 2007.
 - The 2006 International Conference on Semantic Web & Web Services (SWWS'06), Las Vegas, Nevada, USA, June 26-29, 2006.
 - The 2006 Information Resources Management Association International Conference (IRMA

- 2006), Washington D.C., May 21-24, 2006.
- *Workshop on Bridging the Gap between Semantic Web and Web 2.0*, in affiliation with Fourth European Semantic Web Conference (ESWC-2007), Innsbruck, Austria, June 6-7, 2007.
- *Workshop on Semantics for Web Services (SemWS'06)*, in affiliation with Fourth European Conference on Web Services (ECOWS'06), Zurich, Switzerland, December 4, 2006.
- *Semantic Web Education and Training Workshop (SWET'06)*, in affiliation with First Asian Semantic Web Conference (ASWC 2006), Beijing, China, September 4, 2006.
- *Semantic Web Applications and Tools Workshop (SWAT'06)*, in affiliation with First Asian Semantic Web Conference (ASWC 2006), Beijing, China, September 3, 2006.
- Referee and Reviewer.
 - Regular referee of TKDE (IEEE Transactions on Knowledge and Data Engineering)
 - Referee of AMCIS 2006; APWeb 2004; CAiSE 2007; DeSeGov 2007; EKAW 2006; ER 2006, 2005, 2004, 2003, 2002; ICEBE 2006; ICWE 2004; ICWS 2004; ISTA 2003; ISWC 2003; SIGMOD 2008; WIDM 2004; and WISE 2006, 2004, 2002.
- Professional organization member: ACM and AIS SIGSEMIS

Other Activities / Awards / Cultural & Language Skills / Interests

- Nominated by Marquis Who's Who in America® 2008 Edition selection committee
- Selected Awards.
 - First Place Award, eBusiness Idea Competition (with Yuri A. Tijerino), BYU, April 2004.
 - The title of *Outstanding Graduate Student* (annual award), Anhui Province, China, July 1997.
 - Third Place Award, First USTC Graduate Student Encyclopedic Contest, University of Science and Technology of China, October 1994.
- Languages: English, Chinese (Mandarin)
- Interest: reading, hiking, contract bridge, Chinese chess, Go.
- Special activities and volunteer
 - member of USTC contract bridge school team. 1991-1995
 - animal keeping and gardening at City Zoo of Nanchang, China

References:

David W. Embley, Professor

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Advisor of my PhD and master in Computer Science. Being his research assistant since Spring 2001, and being his teaching assistant for several courses. In Spring 2004, co-instructing CS652 at BYU.

Martin Hepp, Professor

Digital Enterprise Research Institute (DERI), University of Innsbruck,

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Working together at DERI Innsbruck from May to August 2006, co-authoring two papers.

Deryle W. Lonsdale, Associate Professor

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BYU Data Extraction Group fellow, known each other for 6 years and co-authoring several papers.

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BYU Data Extraction Group fellow, known each other for 7 years and co-authoring several papers.