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# Jinyue Zhang

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## HIGHLIGHTS

- 2007-Present** Lecturer, Department of Civil Engineering, University of Toronto  
**2007-2009** Ph.D., University of Toronto (December 2009)  
**2005-2009** Manager, Centre for Information Systems in Infrastructure and Construction, U of T  
**2009** **Prospective Professors In Training Certificate**, University of Toronto  
**1995-2001** **Structural Engineer**, Tianjin Architecture Design Institute, Tianjin, China

## EDUCATION

- 2004-2009** **Ph.D. in Civil Engineering and Management** specializing in the area of **Construction Informatics**  
University of Toronto, Toronto, ON, Canada  
Dissertation: A Social Semantic Web System for Coordinating Communication in the Architecture, Engineering and Construction Industry  
Supervisor: Professor Tamer E. El-Diraby
- 2002-2004** **Master of Applied Science in Civil Engineering and Management**  
University of Toronto, Toronto, ON, Canada  
Thesis: A Semantic Environment for Documenting Lessons Learned in the Building Industry (Grade A+)  
Supervisor: Professor Tamer E. El-Diraby
- 1991-1995** **Bachelor of Engineering in Civil Structural Engineering**  
**Bachelor of Engineering in Industrial Management**  
Tianjin University, Tianjin, China

## HONOURS AND AWARDS

- 2003-2008** University of Toronto Open Fellowship, **\$4,000/year**  
**2003-2004** Ontario Graduate Scholarship, **\$15,000/year**  
**1993-1995** Tianjin University Scholarship, **RMB2,000/year**

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**RESEARCH AND TEACHING INTERESTS**

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|---------------------------|--|
| <b>Research Interests</b> | <p><b>Use of Information and Communication Technology (ICT) in the AEC industry</b></p> <ul style="list-style-type: none"> <li>• ICT support for construction project management</li> <li>• Semantic Web and Social Web applications in the AEC industry</li> <li>• Life cycle information logistics of construction project supply chain management</li> <li>• Building Information Modelling (BIM) for effective collaboration in building construction projects and n-dimensional visualization of building product model</li> <li>• Advanced technology for intelligent buildings</li> </ul> |
| <b>Teaching Interests</b> | <p><b>Effective teaching and learning to transfer knowledge and guide research</b></p> <ul style="list-style-type: none"> <li>• Knowledge transfer in undergraduate education in the area of project management, building information modelling, and mechanics and structures</li> <li>• Research introduction and guidance in graduate education in the area of advanced ICT application in the AEC industry</li> </ul>   |

**RESEARCH EXPERIENCE**

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|---------------------|---|
| <b>2004-Present</b> | <p><b>Research Assistant</b>, doctoral level<br/>Department of Civil Engineering, University of Toronto</p> <ul style="list-style-type: none"> <li>• Developed the first domain-level ontology for JIIRP (Joint Infrastructure Interdependencies Research Program) to model industry actors and roles.</li> <li>• Developed an information and knowledge system that, for the first time, incorporates Semantic Web technologies and Social Web concepts into a publish/subscribe system, to facilitate information exchange and knowledge sharing in the AEC industry.</li> <li>• Conducted literature research on applying Building Automation Systems (BAS) in intelligent buildings.</li> <li>• Completed a constructability study for applying superstructure rotation method in bridge construction.</li> <li>• Conducted a study of epistemology for applying wiki sites to better organize the knowledge learning process in the AEC industry.</li> </ul> |
| <b>2006-2007</b>    | <p><b>Research Coordinator</b><br/>I2c Lab, Department of Civil Engineering, University of Toronto</p> <ul style="list-style-type: none"> <li>• Coordinated a collaboration research about sustainable workspaces with several biologists and environmental experts.</li> </ul>   |
| <b>2002-2004</b>    | <p><b>Research Assistant</b>, master's level<br/>Department of Civil Engineering, University of Toronto</p> <ul style="list-style-type: none"> <li>• Developed the first taxonomy for the building construction industry.</li> </ul>  |

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**TEACHING EXPERIENCE****2007-Present    Lecturer**

Department of Civil Engineering, University of Toronto

**CIV100: Mechanics** (Fall 2008, Fall 2009)

- A first year undergraduate-level course to introduce the basic concepts of statics through applying forces, moments, and couples on particles, individual members and structures.
- Taught two sections, 97 and 100 registered students respectively.
- Designed course syllabus, lecture plans and slides, assignments, course project, exams, assessment plan, and course website.
- Delivered 39 lectures and 12 tutorial classes, marked final exam, and answered questions during (and after) office hours.
- Teaching evaluation scored 6.24 and 6.69 out of 7 respectively, the highest among 8 instructors of the same course. (faculty average 5.44 out of 7)

**CIV101: Structures, Materials and Design** (Fall 2007)

- A first year undergraduate-level course to introduce the fundamental concepts of statics, the basic mechanical features of materials and preliminary design skills.
- 95 registered students in class.
- Designed course syllabus, lecture plans and slides, assignments, course project, exams, assessment plan, and course website.
- Delivered 39 lectures and 12 tutorial classes, marked final exam, and answered questions during (and after) office hours.
- Teaching evaluation scored 6.46 out of 7, the highest among 9 instructors of the same course. (faculty average 5.37 out of 7)

**2006-2007****Guest Lecturer**

Department of Civil Engineering, University of Toronto

**CIV1299: Construction Modelling Methods** (Spring 2007)

- A graduate-level course to introduce the concepts of simulation and modeling that relate to construction sites.
- Delivered a guest lecture to show an application example in discrete events.
- Demonstrated the use of Visual SLAM and AweSim, and analyzed/interpreted the output of simulation execution.

**CIV320: Construction Management** (Fall 2006, 2007, 2009)

- A third year undergraduate-level course to introduce the basic theories and techniques of construction management.
- Delivered a series of guest lectures to address issues of Building Information Modelling (BIM).

- Covered the rationals and history of BIM, current and potential applications, existing industry practices, popular modelling tools (Graphisoft ArchiCAD and Constructor, AutoCAD Civil 3D and Revit), and nD simulation and modelling.
- Designed lectures and designed/marked course project.

**CIV1283: Civil Informatics** (Fall 2006)

- A graduate-level course to introduce the fundamental concepts in informatics that relate to civil engineering systems.
- Delivered a guest lecture to present a virtual construction solution provided by Graphisoft.
- Demonstrated how information can be managed in construction modelling, estimating, project management, and 5D presentation (3D+Time+Cost).

**2003-2007****Teaching Assistant**

Department of Civil Engineering, University of Toronto

**APS1001: Project Management** (Summer 2007)

- Marked assignments and exams, assisted in course material preparation, and managed course project.

**CIV320: Construction Management** (Spring 2005, 2006, 2007)

- Marked assignments and course project, tutored students in tutorial classes, designed course projects (4D visualization project, bidding project, and Primavera project), and designed interactive courseware.
- Prepared/maintained course website and organized guest lectures.

**CIV210: Solid Mechanics I** (Fall 2006)

- Marked assignments, tutored students, and organized labs.

**CIV101: Structures, Materials and Design** (Fall 2003, 2004, 2005)

- Assisted course instructor in lecture preparation, marked assignments and course project, tutored students, and prepared/maintained course website.

**PROFESSIONAL EXPERIENCE****2001-2002****Product Engineer**

Sureblock (Tianjin) Concrete Products Ltd., China

- Advised clients on properly selecting concrete block products.
- Provided technical designs of various structures using concrete blocks.
- Assisted marketing department to perform SWOT analyses of concrete kerbs.

**1995-2001****Structural Engineer**

Tianjin Architecture Design Institute, Tianjin, China

- As the leading structural engineer, led structural design in three large-scale building construction projects: Peace Village Complex (380,000 sq. ft.), Tianjin Customs Tower (350,000 sq. ft.), and Haikou Mapo Apartments (250,000 sq. ft.)
- As a main design engineer, participated in about 16 building construction projects with a variety of structural styles.
- Co-supervised the computer studio and trained about 40 company employees in using AutoCAD and structural analysis software.
- Performed other jobs related to structural design, including on-site inspection, client liaison, design coordination with other engineers, etc.

**ACADEMIC AND ADMINISTRATIVE EXPERIENCE****2009-Present****Journal Reviewer**

The Canadian Journal of Civil Engineering

**2005-2008****Manager**

Centre for Information Systems in Infrastructure and Construction (i2c Lab)

- As founder's representative, coordinated the space renovation project in 2004 to host this newly established research centre.
- Co-designed smart systems for the Lab and supervised their implementation, including computer networks, a security system, a building automation system with smart sensors, and an audio/video presentation system.
- Managed a collaborative research project (2006-2007) with biologists regarding the living wall (an ecosystem composed of live plants, aquariums, and a set of mechanical/electrical systems) installed in the Lab.
- Managed several software-development projects that involved various internal and external contractors.
- Made recommendations and suggestions to the Lab director about potential research opportunities and lab-system-upgrade alternatives.
- Was in charge of daily operation and maintenance of the Lab.

**2007-2008****Construction Buddy**

Department of Civil Engineering, University of Toronto

- Held a volunteer position in the Civil Engineering and Management group.
- Answered general questions about the area of civil engineering
- Provided introduction to undergraduate students interested in pursuing graduate studies in ICT application in Civil Engineering and Management.

**PROFESSIONAL DEVELOPMENT**

- 2007-2009**      **Prospective Professors in Training Program (PPIT)**  
Faculty of Applied Science, University of Toronto
- A program dedicated to training and preparing Ph.D. students for their roles as university faculty member.
  - Completed the core course MIE3002 Engineering Teaching and Learning in Higher Education.
  - Attended eight core seminars and five elective seminars regarding the management of time and resources when balancing teaching, research, and university administration.
  - Composed a Research Statement and a Teaching Statement that provided philosophical basis for the professional pursuit of academic research and teaching.

**PUBLICATIONS AND PRESENTATIONS**

- Monograph**      **Zhang, J.** (2009) Documenting Lessons Learned in the Building Construction Industry, ISBN 9783838315133, Lambert Academic Publishing, Koln, Germany.
- Journal Articles**      **Zhang, J.** and El-Diraby, T. E. (2009) "SSWP: A Social Semantic Web Portal for communication in construction". *Journal of Computers*. Vol. 4(4), 330-337. **[EI Indexed]**
- Zhang, J.** and El-Diraby, T. E. (2006) "Constructability analysis of the bridge superstructure rotation construction method in China". *Journal of Construction Engineering and Management*. Vol. 132(4), 353-362. **[SCI Indexed] [EI Indexed]**
- El-Diraby, T. E. and **Zhang, J.** (2006) "A semantic framework to support corporate memory management in building construction". *Automation in Construction*. Vol. 15(4), 504-521. **[SCI Indexed] [EI Indexed]**
- Refereed Conference Articles**      **Zhang, J.** and El-Diraby, T. E. (2009) "Mapping actors and roles in construction knowledge". The 2009 Conference ASCE Construction Research Congress. Seattle, Washington, USA, April 5-7. **[EI Indexed]**
- Zhang, J.** and El-Diraby, T. E. (2009) "A Social Web approach managing information and knowledge in the AEC industry". International Conference on Engineering, Management and Service Sciences EMS. Beijing, China, September 20-22. **[EI Indexed]**

**Zhang, J.** (2007) "A knowledge sharing model in the civil infrastructure industry". The 2007 IEEE International Conference on Systems, Men, and Cybernetics. Montreal, Quebec, Canada, October 7-10. **[SCI Indexed] [EI Indexed]**

El-Diraby, T. E. and **Zhang, J.** (2007) "Modelling actors and roles for AEC community". The 2007 Conference ASCE Construction Research Congress, Grand Bahamas Island, May 6-8.

El-Diraby, T. E. and **Zhang, J.** (2004) "Semantic documentation of lessons learned in the building construction industry". The 11th ISPE International Conference on Concurrent Engineering. Beijing, China, June 26-30. **[SCI Indexed]**

**Guest Speaker** "Construction Informatics: The Origin and Trend". Presented to the Department of Construction Management, Tsinghua University, July 2009, the Department of Building Engineering, Tongji University, June 2009, and the College of Civil Engineering and Architecture, Zhejiang University, June 2009.

"Ontology". The Annual Conference of Canadian Society of Civil Engineers. Moncton, Canada, June 4-7, 2003.

**Works in Progress** **Zhang, J.** and El-Diraby, T. E. "Supporting semantic information and knowledge sharing by ontologies". For submission to *Automation in Construction*.

**Zhang, J.** and El-Diraby, T. E. "A social semantic information system to manage information and knowledge in the AEC industry". For submission to *Journal of Construction Engineering and Management*.

## PROFESSIONAL REGISTRATIONS

**2000-Present** **Professional Engineer**, Registration Number 055210, China

**1996-2000** **Assistant Engineer**, Registration Number 103341, China

## PROFESSIONAL AFFILIATIONS

**2003-Present** **Member**, Project Management Institute (PMI)

**2003-Present** **Member**, Canadian Society of Civil Engineers (CSCE)

**2007-Present** **Member**, Institute of Electrical and Electronics Engineers (IEEE)