# Jin Guo

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## Research Interests

Software Engineering, Software Traceability, Natural Language Processing, Neural Network

## Education

07/2016 - Present (expected 07/2017) **University of Notre Dame**, Notre Dame, USA
Ph.D. Candidate in Computer Engineering

*Advisor*: Dr. Jane Cleland Huang
*Dissertation*: Semantically Enhanced Software Traceability
*Committee*: Collin McMillan, David Chiang, Jane Hayes (University of Kentucky)

01/2013 - 06/2016 **DePaul University**, Chicago, USA
Ph.D. student in Computer and Information Science

*Advisor*: Dr. Jane Cleland Huang

09/2006 - 06/2009 **Xian Jiaotong Univeristy**, Xi'an, China
M.S. in Information and Communication Engineering

*Advisor*: Chunhua Du
*Thesis*: Research on Feature Object 3D Reconstruction Based on Monocular Vision

09/2002 - 06/2006 **Xian Jiaotong Univeristy**, Xi'an, China
B.S. in Information Engineering

## Employment Experience

07/2016 - Present **Research Assistant**, Univeristy of Notre Dame, Notre Dame, USA

- *Semantically Enhanced Software Traceability Using Deep Learning Techniques*: designed a tracing network architecture that utilized Word Embedding and Recurrent Neural Network (RNN) to extract and compare semantic information from software artifact for the purpose of software trace link generation.

01/2013 - 06/2016 **Research Assistant**, DePaul Univeristy, Chicago, USA

- *Domain Knowledge Base Construction*: designed a knowledge mining approach and corresponding tool that leveraged trace links in software intensive systems to guide the process of mining domain facts for building a knowledge base.
- *Intelligent Domain-Specific Traceability*: designed and implemented solutions for accurate trace links evaluation between software artifacts and generate the underlying rationales explaining those links utilizing natural language processing and knowledge representation techniques.

06/2009 - 07/2011 **Researcher**, Communication Technology Lab, Fuji Xerox, Yokohama, Japan

- *SkyDesk collaboration service*: designed and implemented image processing algorithms to extract and correct business card and whiteboard regions from images with complex background.
- *Image comparison*: designed and implemented a fuzzy image comparing algorithm for the purpose of printer software testing.

10/2007 - 07/2008 **Visiting Research Fellow**, Communication Technology Lab, Fuji Xerox, Nakai, Japan

- *Sensing UI*: participated in designing and implementing a novel human-computer interface based on 3D tracking technologies and took in charge of the image processing module.

## Teaching Experience

Guest Lecturer *Design Patterns*
SE350: Object-Oriented Software Development, DePaul University. (Spring, 2016)

Guest Lecturer *Ontology Learning for Software-Intensive Projects*
CSC 480: Artificial Intelligence, DePaul University. (Spring, 2016)

Co-Instructor *Image Processing and Pattern Recognition*
Internal Tutorial, Fuji Xerox. (Fall, 2009)

## Publication

Journal Articles **Guo, J.**, M. Gibiec, and J. Cleland-Huang. "Tackling the Term-Mismatch Problem in Automated Trace Retrieval". Accepted to: *Empirical Software Engineering Special Issue on Software and System Traceability*. 2016

Conference Papers **Guo, J.**, J. Cheng, and J. Cleland-Huang. "Semantically Enhanced Software Traceability Using Deep Learning Techniques". Submitted to: *the 38th International Conference on Software Engineering, ICSE 2017*

Cheng, J., D. C. Anderson, C. Putnam, and **J. Guo**. "GaPBIT: Leveraging Design Patterns to Support Design of Brain Injury Therapy Games". Submitted to: *the 2017 CHI Conference on Human Factors in Computing Systems*

Cheng, J., C. Putnam, and **J. Guo**. ""Always a Tall Order": Values and Practices of Professional Game Designers of Serious Games for Health". In: *Proceedings of the 2016 Annual Symposium on Computer-Human Interaction in Play*. CHI PLAY '16. Austin, Texas, USA: ACM, 2016, pp. 217–228. (Acceptance rate: 29%)

**Guo, J.**, M. Rahimi, J. Cleland-Huang, A. Rasin, J. H. Hayes, and M. Vierhauser. "Cold-start software analytics". In: *Proceedings of the 13th International Conference on Mining Software Repositories, MSR 2016, Austin, TX, USA, May 14-22, 2016*. 2016, pp. 142–153. (Acceptance rate: 27%)

**Guo, J.**, N. Monaikul, C. Plepel, and J. Cleland-Huang. "Towards an intelligent domain-specific traceability solution". In: *ACM/IEEE International Conference on Automated Software Engineering, ASE '14, Vasteras, Sweden - September 15 - 19, 2014*. 2014, pp. 755–766. (Acceptance rate: 20%)

**Guo, J.**, J. Cleland-Huang, and B. Berenbach. "Foundations for an expert system in domain-specific traceability". In: *21st IEEE International Requirements Engineering Conference, RE 2013, Rio de Janeiro-RJ, Brazil, July 15-19, 2013*. 2013, pp. 42–51. (Acceptance rate: 18%)

Works-In-Progress & Workshops

**Guo, J.** "Ontology learning and its application in software-intensive projects". In: *Proceedings of the 38th International Conference on Software Engineering, ICSE 2016, Austin, TX, USA, May 14-22, 2016 - Companion Volume*. 2016, pp. 843–846

**Guo, J.**, N. Monaikul, and J. Cleland-Huang. "Trace links explained: An automated approach for generating rationales". In: *23rd IEEE International Requirements Engineering Conference, RE 2015, Ottawa, ON, Canada, August 24-28, 2015*. 2015, pp. 202–207

Cleland-Huang, J. and **J. Guo**. "Towards more intelligent trace retrieval algorithms". In: *3rd International Workshop on Realizing Artificial Intelligence Synergies in Software Engineering, RAISE 2014, Hyderabad, India, June 3, 2014*. 2014, pp. 1–6

Issued Patent

**Guo, J.** and T. Onishi. "Subject region detecting apparatus". Pat. 8,805,077. Aug. 12, 2014

**Guo, J.** and T. Onishi. "Image processing apparatus, image processing method, and computer readable medium". Pat. 8,923,610. Dec. 30, 2014

## Activities and Service

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| Org. Committee | The 1st, 2nd, and 3rd International Workshop on AIRE. 2014–2016 |
| Prog. Committee | The 5th International Workshop on RAISE. 2016 |
| | The 8th International Symposium on SST. 2015 |
| Student Volunteer | RE'15, KDD'13, RE'12 |

## Honors and Scholarship

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| 2013 – 2015 | *Summer Research Fund*, DePaul University |
| 2013 | *Ready-Set-Transfer Award*, 21st IEEE International Requirements Engineering Conference |
| 07/2011 | *Chief Minister's Research Award*, Fuji Xerox |
| 11/2005 | *Siyuan Scholarship*, Xi'an Jiaotong University |
| 2002 – 2006 | *Innovation Fund*, Xi'an Jiaotong University |