

## Curriculum Vitae

### Wei Li

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### EDUCATION

Ph.D. in Computer Science (1992) Virginia Polytechnic Institute and State University  
B.S. in Computer Science (1984) Beijing University

### AREAS OF INTEREST

Software engineering; software metrics; formal methods; software testing.

### JOURNAL AND BOOK-CHAPTER PUBLICATIONS

- Shatnawi, Raed, **Wei Li**, "An Empirical Investigation of Predicting Fault Count, Fix Cost and Effort using Software Metrics", *International Journal of Advanced Computer Science and Applications (IJACSA)*, accepted Feb. 2016.
- Pitamber Tiwari, **Wei Li**, Raouf Alomainy, and Bingyang Wei, "An Empirical Study of Different Types of Changes in the Eclipse Project," *The Open Software Engineering Journal*, 2013, 7, 24-37.
- Raouf Alomainy, and **Wei Li**, "DSS: A Formal Framework and a Software Tool to Extract Object-Oriented Design State Space and Syntax-Based Metrics," *International Journal of Computers and Their Applications (IJCA)*, Vol. 20, No. 2, June, 2013.
- Shatnawi, Raed , **Wei Li**, "An Empirical Assessment of Refactoring Impact on Software Quality Using a Hierarchical Quality Model," *International Journal of Software Engineering and its Applications*, . 5, no. 4, October, 2011.
- Deel Mani Baral, **Wei Li**, Pitamber Tiwari , "Collecting error data from open source system websites," *Internet Journal*, Volume 3, Issue 4, Nova Publishers, 2010.
- Shatnawi, Raed , **Wei Li**, James Swain, and Tim Newman, "Finding software metrics threshold values using ROC curves," *Journal of Software maintenance and Evolution*, vol. 22, no. 1, pp. 1-16, January 2010.
- Shatnawi, Raed and **Wei Li**, "The effectiveness of software metrics in identifying error-prone classes in the post-release software evolution process," *Journal of Systems and Software*, Vol. 81, No.11, (2008), pp. 1868-1882.
- Li, Wei**, "The big bang graph—a colored graph representation of software design," *Computer Science Research Trends* (Ed. Casey B. Yarnall), Nova Science Publishers, Book Chapter (2008).
- Li, Wei** and Raed Shatnawi, "An Empirical Study of the Bad Smells and Class Error Probability in the Post-Release Object-Oriented System Evolution," *Journal of Systems and Software*, Vol. 80, No. 7, pp.1120-1128, (2007).
- Hector Olague, Letha Eitzkorn, **Wei Li** and Glen Cox, "Examining System Design Instability and Progress in Highly Iterative, Rapidly Evolving Object-Oriented Software Projects," *Journal of Software Maintenance*, Vol. 18, Issue 4, July/August 2006, pp.237-266.
- Alshayeb, M. and **Wei Li**, "An empirical study of relationships among the extreme programming engineering activities," *Information & Software Technology*, Vol. 48, No. 11, pp.1068-1072, 2006.
- Alshayeb, M. and **Wei Li**, "An Empirical Study of System Design Instability Metric and Design Evolution in an Agile Software Process," *Journal of Systems and Software*, Vol. 74, No. 3, pp.269-274, February, 2005.
- Alshayeb, M. and **Wei Li**, "An Empirical Validation of Object-Oriented Metrics in Two Iterative Processes," *IEEE Transaction on Software Engineering*, Vol. 29, No. 11, 1043-1049, November 2003.
- Li, Wei**, Letha Eitzkorn, Carl Davis, and John Talburt, "An Empirical Study of Object-Oriented System Evolution," *Information & Software Technology*, Vol. 42, No. 6, pp. 373-381, April 2000.
- Li, Wei**, "Software Product Metrics," *IEEE Potential*, Vol. 18, No. 5, 24-27, January 2000.

- Bansiya, Jagdish, Letha Etkorn, Carl Davis, and **Wei Li**, "A Class Cohesion Metric for Object-Oriented Design," *Journal of Object-Oriented Programming*. Vol. 11, No. 8, January 1999.
- Li, Wei**, "Another Metrics Suite for Object-Oriented Programming," *Journal of Systems and Software*. Vol. 44, No. 2, December 1998.
- Etkorn, Letha, Carl Davis, and **Wei Li**, "A Practical Look at the Lack of Cohesion in Methods Metric," *Journal of Object-Oriented Programming*. Vol. 11, No. 5, September 1998.
- Li, Wei** and John Talburt, "Empirically Analyzing Object-Oriented Software Evolution Using Metrics," *Journal of Object-Oriented Programming*. Vol. 11, No. 5, September 1998.
- Li, Wei**, "Empirical Study of Software Reuse in Reconstructive Maintenance," *Journal of Software Maintenance*. Vol. 9, No. 2, 69-83. March/April 1997.
- Li, Wei**, "An Empirical Study of Object Analysis and Design," *Journal of Object-Oriented Programming*. Vol. 9, No. 8, pp.44-53, January 1997.
- Li, Wei**, Sallie Henry, Dennis Kafura, and Robert Schulman, "Measuring Object-Oriented Design," *Journal of Object-Oriented Programming*, Vol. 8, No. 4, 48-55, July 1995.
- Li, Wei** and Sallie Henry, "An Empirical Study of Maintenance Activities in Two Object-Oriented Systems," *Journal of Software Maintenance* Vol. 7, No. 2, 131-147, March/April, 1995.
- Li, Wei** and Sallie Henry, "Object-Oriented Metrics Which Predict Maintainability," *Journal of Systems and Software*, Vol. 23, No. 2, 111-122, November 1993.

#### CONFERENCE PUBLICATIONS

- Michael C. Lindsey, David J. Coe, Jeffrey H. Kulick, Letha Etkorn, Wei Li, and Yujian Fu, "Design of Safety Critical Survivable Systems Using Autonomic and Semantic Web Methodologies," The 11th International Conference on Software Engineering Research and Practice (SERP'12), July 16-19, 2012, USA).
- Raouf Alomainy and Wei Li, "Z Formal Framework for Syntax-Based Module Level Software Metrics," The 11th International Conference on Software Engineering Research and Practice (SERP'12), July 16-19, 2012, USA).
- Raouf Alomainy and Wei Li, "A software tool that extracts syntax-based software metrics based on the Z formalization," 27th International Conference on Computers and Their Applications (CATA-2012); Las Vegas, NV, March 2012.
- Tiwari, Pitamber, Wei Li, and Neale Currie, "On Distribution of Error and Non-Error Changes in the Eclipse Project," *Proceedings: ISCA 24<sup>th</sup> International Conference on Computer Applications in Industry and Engineering (CAINE-2011)*, Honolulu, Hawaii, November 2011.
- Alomainy, Raouf, Wei Li, and Neale Currie, "DSS: A Software Tool to Extract Object-Oriented Design State Space," *Proceedings: ISCA 24<sup>th</sup> International Conference on Computer Applications in Industry and Engineering (CAINE-2011)*, Honolulu, Hawaii, November 2011.
- Tiwari, Pitamber, Wei Li, and Deel Mani Baral, "Using a Crawler to Collect Error Data from Open Source Systems," *Proceedings: International Conference on Software Engineering Research and Practice (SERP'11)*, Las Vegas, Nevada, July 2011.
- Alomainy, Raouf and Wei Li, "An Empirical Study of Messaging Systems and Migration to Service-Oriented Architecture", *Proceedings: International Conference on Engineering and Meta-Engineering, ICEME 2010*, Vol. 1, pp. 157-161, April 2010.
- Alomainy, Raouf and Wei Li, "Using Ponder as a Standard Security Specification Language in Heterogeneous Networks," *Proceedings: ISCA 22<sup>nd</sup> International Conference on Computer Applications in Industry and Engineering (CAINE-2009)*, pp.128-134, San Francisco, California, November 2009.
- Alomainy, Raouf and Wei Li, "An experimental approach to prove metrics properties," *Proceedings: International Conference on Software Engineering Research and Practice (SERP'09)*, Vol. 2, pp.408-413, Las Vegas, Nevada, June 2009.
- Li, Wei, Huaming Zhang, and Raed Shatnawi, "A Graph-Based Representation of Object-Oriented Designs," *Proceedings: International Conference on Software Engineering Research and Practice (SERP'06)*, pp.198-204, Las Vegas, Nevada, June 2006.
- Shatnawi, Raed, Wei Li, and Huaming Zhang "Predicting Error Probability in the Eclipse Project," *Proceedings: International Conference on Software Engineering Research and Practice (SERP'06)*, pp.422-428 Las Vegas, Nevada, June, 2006.

- Shatnawi, Raed and Wei Li, "An Empirical Study of Errors in an Open Source System," *Proceedings: Third International Conference on Information Technology: New Generation (ITNG 2006)*, pp.161-163, Las Vegas, Nevada, April, 2006.
- Li, Wei, and Mohammad Alshayeb, "An Empirical Study of XP Effort Distribution," *Proceedings: 17<sup>th</sup> International Forum on COCOMO and Software Cost Modeling*, Los Angeles, California, October 22-25, 2002.
- Li, Wei, Mohammad Alshayeb and John Talburt "XP and OO Design", *Proceedings: World Computer Congress 2000*, Beijing, China, August 2000.
- Li, Wei, John Talburt and Mohammad Alshayeb, "An Empirical Study of Extreme Programming", *Proceeding: SSGRR2000*, L'Aquila, Italy, July 2000.
- Lakshminarayana, A., T. Newman, W. Li, and J. Talburt, "Automatic Extraction and Visualization of Object-Oriented Software Design Metrics", *Proceedings: Visual Data Exploration and Analysis VIII Conference*, pp.218-225, 2000.
- Li, Wei and Harry Delugach "Software Metrics and Application Domain Complexity," *Proceedings (Poster): Asia-Pacific Software Engineering Conference*, Hong Kong, December 1997.
- Li, Wei, "An Empirical Study of Object-Oriented Design Evolution", *Proceedings: IASTED International Conference on Software Engineering*, San Francisco, November 2-5 1997. 202-206.
- Li, Wei, "Managing Embedded Projects in Reconstructive Maintenance," *Proceedings: Embedded Systems Conference '97*, San Jose, California, October 1997. 625-637.
- Li, Wei, John Talburt, and Y.T. Chen, "Quantitatively Measuring Object-Oriented Design Evolution," *Proceedings: 24th International Technology of Object-Oriented Languages and Systems (TOOLS) Asia '97*, Beijing, China, September 1997. 453-458.
- Hambuchen, Scott, Wei Li, and Y. T. Chen, "Making the Transition to Object Technology," *Proceedings: Arkansas Computer Conference'96*. Searcy, Arkansas. March 1996. 32-36.
- Li, Wei, John Talburt, Don Sobkoviak, and Mike Benert, "Learning Object-Oriented Programming in a Structured Environment," *Proceedings: Arkansas Computer Conference'96*. Searcy, Arkansas. March 1996. 12-22.
- Li, Wei, "Reconstructive Software Maintenance," *Proceedings: Software Engineering Research Forum'95*. Boca Raton, Florida. November 1995. 95-102.
- Li, Wei, and John Talburt, "Managing Software Projects in a Paradigm Transition Environment," *Proceedings: Sixth International Workshop on Management of Software Project*. University of Karlsruhe, Germany. September 1995.
- Li, Wei, "Software Reconstruction in Embedded Systems," *Proceedings: Intelligent Motion Systems'95*. Long Beach, California. September 1995. 248-258.
- Lattanzi, Mark, Sallie Henry, Mike Tiffany, Wen Gong, and Wei Li, "A Software Metrics Generation Tool for the Object-Oriented Paradigm," *Proceedings: Applications of Software Measurement*, Orlando, November, 1993, 603-614.
- Li, Wei and Sallie Henry, "Maintenance Metrics for the Object-Oriented Paradigm," *Proceedings: IEEE-CS International Software Metrics Symposium*, Baltimore, May 1993, 52-60.
- Li, Wei, "Vermont View - An User Interface Design Tool," *Proceedings: The 21st Annual Virginia Computer Users Conference*, Blacksburg, Virginia, 1991, 23-30.
- Li, Wei and Sallie Henry, "Some Metrics Primitives for the Object-Oriented Paradigm," *Proceedings: International Conference on Achieving Quality In Software '91*, Pisa, Italy, April, 1991, 45-50.
- Li, Wei, Sallie Henry, and Calvin Selig, "Measuring Ada Design to Predict Maintainability," *Proceedings: The 9th Annual National Conference on Ada Technology*, Washington DC, March, 1991, pp.107-113.
- Li, Wei and Sallie Henry, "Software Life Cycle Model Using Metrics," *Proceedings: The 19th Annual Computer Science Conference of ACM*, March 5-7, 1991, San Antonio, Texas, 661-662.
- Li, Wei and Sallie Henry, "A Lifecycle Model Which Incorporates Software Metrics," *Proceedings: The Ninth National Conference on EDP System and Software Quality Assurance*, October 22-25, 1990. Washington, D.C., 331-356.
- Henry, S.M. Steve Wake and Wei Li, "Applying Complexity Metrics During the Software Life Cycle," *Proceedings: Interface '90, The 22nd Symposium on the Interface: Computing Science and Statistics*, East Lansing, Michigan, May, 1990, 23-29.

## **NONREFEREED CONFERENCE PUBLICATIONS**

Li, Wei, and Mohammad Alshayeb, "An Empirical Study of Effort Distribution in Extreme Programming," *Proceedings: 17<sup>th</sup> International Forum on COCOMO and Software Cost Estimation*, Los Angeles, California, October 2002.

Li, Wei, "Breaking the Exponential-Grow Curve in Software Maintenance," *Proceedings: Workshop on Empirical Studies of Software Maintenance*, San Jose, California, October 2000.

Li, Wei and John Talburt "Object-Oriented Education Issues in Industry and Academia - Experience Learned in Two Object-Oriented Projects," *Proceedings (Workshop): OOPSLA'97 Workshop on Doing Your First OO Project--OO Education Issues in Industry and Academia*, Atlanta, October 1997 (workshop position paper).

Li, Wei and John Talburt, "One Failure and One Success—Experience Learned in Managing Two Object-Oriented Projects," *Proceedings (Workshop): OOPSLA'97 Workshop on Object-Oriented Project Management*, Atlanta, October 1997 (workshop position paper).

Henry, Sallie and Wei Li, "Metrics for Object-Oriented Systems," *Proceedings: OOPSLA'92* (workshop position paper).

## **EDITORIAL BOARD/EDITOR**

The Open Software Engineering Journal; editorial board Member.

The Journal of Emerging Technologies in Web Intelligence; editorial board member.

The Journal of Intelligent Information Management; editorial board member.

## **REFeree/REVIEWER**

Israeli Science Foundation

Hong Kong Polytechnic University

King Fahd University of Petroleum & Minerals (KFUPM)

Chinese Academy of Sciences (CAS)

National Science Foundation (NSF)

IEEE Transaction on Software Engineering

Annals of Software Engineering

International Conference on Software Maintenance

Annals of Software Engineering

Journal of Software Maintenance and Evolution

## **GRANTS/RESEARCH FUNDING**

National Science Foundation (NSF CCR-0097058), \$78,977, August 2001 – August 2002. Principal Investigator.

Axiom Corporation, \$123,642, 8/1999 – 8/2000 (Principal Investigator).

Sun Microsystems Computer Corporation, \$28,580, 10/1999 – 01/2000 (Principal Investigator).

Axiom Corporation, \$152,000, 8/1998 – 8/1999 (Principal Investigator).

Axiom Corporation, \$28,000, 8/1998 – 8/1999. Equipment Grant (Principal Investigator; Co-PI was Dr. Tim Newman).

Axiom Corporation, \$80,400. 1/1998 – 8/1998 (Principal Investigator).

Axiom Corporation, \$45,537. 8/1997 – 5/1998 (Principal Investigator).

Axiom Corporation, \$2,500. 1/97 – 3/97 (Principal Investigator).

VMARK Corporation, \$5,000 (Software Licenses). 3/96 – 3/97 (Principal Investigator).

Axiom Corporation, \$165,000. 8/95 – 8/96 (Principal Investigator; Co-PI was Dr. Y.T. Chen).

Axiom Corporation, \$200,000. 8/94 – 8/95 (Co-Principal Investigator; PI was Dr. John Talburt).

## **GRADUATES**

Deel Baral (M.S., July 2011)

Raouf Alomainy (M.S., May 2011)

Pitamber Tiwari (M.S., May 2011)

Gregory Gibbs (M.S., October 2009)

Raed Shatnawi (Ph.D., October 2006)

Mohammad Alshayeb (Ph.D., October 2002)

**EMPLOYMENT EXPERIENCE**

8/01 – present Associate Professor  
Computer Science Department, University of Alabama in Huntsville

5/02 – 12/04 Professor (visiting)  
Graduate School, Chinese Academy of Sciences  
Research Fellow (visiting)  
Software Institute, Chinese Academy of Sciences

8/96 – 8/01 Assistant Professor  
Computer Science Department, University of Alabama in Huntsville

8/94 – 8/96 Assistant Professor  
Computer and Information Science Department, University of Arkansas at Little Rock

6/92 – 8/94 Software Engineer  
Kollmorgen Industrial Drives, Radford, Virginia 24141

**INDUSTRIAL EXPERIENCE**

6/92 - 7/94 Software Engineer  
Kollmorgen Corporation, Radford, Virginia.

5/91 - 8/91 Consultant  
DEC France, Lausanne, Switzerland.

1/90 - 8/91 Systems Engineer  
Institute for Computer-Assisted Research in Astronomy, Blacksburg, Virginia.

5/89 - 8/89 Consultant  
Simens, West Germany.