Dr. Yujian Fu

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Research Interests

Formal Verification, Mobile Security, Security Analysis of Cyber Physical Systems, Software engineering. Specialized areas of interest: formal specification, verification and validation, mobile security, behavior based malware detection, specification based intrusion detection, formal specification & verification of cyber physical systems, real time embedded software design and quality assurance, software testing, runtime verification, software architecture, service oriented architecture (SOA), software evolution.

Journal Papers, Book Chapters, Refereed Conference/Workshop Papers (partial list)

[1] **Yujian Fu**, W. Choosilp. Testing of SMS Security Properties on Android Systems. International Journal of Mobile and Wireless Communications, 2014.

[2] W. Choosilp, **Yujian Fu**. A Case Study Of Malware Detection and Removal in Android Apps. International Journal of Mobile Network Communications & Telematics, Vol. 4, No. 4, April 2014

[3] **Yujian Fu**, S. Drager, "Modeling & Verification of Humanoid Robot Task Coordination", Proceedings of 15th IEEE International Symposium on High Assurance Systems Engineering (HASE), January 9 – 11, 2014, Miami, FL, USA.

[4] **Yujian Fu**, Z. Dong. Specification based intrusion detection on robotics systems. Book Chapter of Innovative Architecture Centric Swarm Robotics Systems. IGI Global (to appear).

[5] **Yujian Fu**, Z. Dong. Innovative Methods and Design Solutions for Securing Smart Grid Systems Book Chapter: Formal Modeling of Cyber Attacks on Smart Grid Systems. IGI Global (to appear).

[6] **Yujian Fu**. *Stability Analysis of Biped Walking Robot*. Journal of Software Engineering for Robots, 2013.

[7] **Yujian Fu**, L. Yan, J. Kulick, S. Drager. *Formal Modeling and Verification of Security Properties of Handel C Programs*. International Journal of Secure Software Engineering, 2012

[8] **Yujian Fu**, S. Li. *A Hierarchical Graph-based Testing of UML2 Sequence Diagram*. International Journal of Computer and Network Security, Vol 2, No. 9, September 2010

[9] **Yujian Fu**, S. Li, X. He, Z. Dong and P. Bording. *A Model Driven Approach for Runtime Assurance of Software Architectures*. International Journal of Computer and Network Security, Vol 2, No. 5, 2010

[10] S. Li, S. King, **Yujian Fu**. *Factors that Influence Learner-Content Interaction in the Online Top-Down Modeling Model Environment*. International Journal of Computer and Network Security, Vol 2, No. 9, 2010

[11] **Yujian Fu**, Z. Dong, and X. He. *A Translator of Software Architecture Design from SAM to Java*. International journal of Software Engineering and Knowledge Engineering. Vol. 17 No. 6, 2007.

[12] **Yujian Fu**, Z. Dong, H. Yu, and X. He. *Towards Evolution Analysis of Software Architecture Description*. Special Issue of International Journal of Software Architecture, 2007.

[13] S. Li and A. Leh and **Yujian Fu** and X. Xhao. *Learners' Preferences in Using Online Learning Resources*. Quarterly Review of Distance Learning, Vol. 10, No. 3, 2009, pages 299-303.

[14] S. Li and S. King and E. Jones and **Yujian Fu** and X. Xhao. *Integrating Multimedia into Ag Education Instruction*. North American Colleges and Teachers of Agriculture (NACTA) Journal, Vol. 52, No. 3, June 2008.

[15] **Yujian Fu**, Z. Dong, and X. He. *Architecture Centered Integrated Verification*. Modern Software Engineering Concepts and Practices: Advanced Approaches, Edited by Ali H. Dogru, Veli Bicer. IGI Global Dissemintor of Knowledge (In Press).

[16] **Yujian Fu**, Z. Dong, and X. He. *Towards Rewriting Semantics of Software Architecture Speci_cation*. Petri Nets, Edited by Vedran Kordic, ISBN 978-953-307-047-6. I-Tech Education and Publishing.

[17] **Yujian Fu**, Z. Dong, and X. He. *Formalizing UML Architecture Description*. Petri Net, Theory and Application, Edited by Vedran Kordic, ISBN 978-3-902613-12-7. I-Tech Education and Publishing.

[18] P. Bhattacharya, M. Guo, L. Tao, **Yujian Fu**, and Kai Qian. *A Collaborative Interactive Cyber-learning Platform for Anywhere Anytime Java Programming Learning*. The 11th IEEE International Conference on Advanced Learning Technologies (ICALT'11), Athens, GA, Jul 6-8, 2011. (Accepted)

[19] S. Jasti, **Yujian Fu**, and P. Koneru. *Modeling and Analyzing Web-based Information Systems*. The International Conference on Software Engineering and Research Practice (SERP 2010), Las Vegas NV, Jul 12-15, 2010.

[20] **Yujian Fu**, J. Ding, P. Bording. *An Approach for Modeling and Analyzing Crosscutting Concerns*. The 5th International Conference on Service Operations, Logistics and Informatics (SOLI 2009), Chicago, IL Jul 22-24, 2009.

[21] **Yujian Fu**, Z. Dong, J. Ding, X. He. *Modular Verification of Software Architecture Model*. The International Conference on Software Engineering and Research Practice (SERP 2009), Las Vegas Jul 12-16, 2009.

[22] **Yujian Fu**, Z. Dong, J. Ding, X. He. *Towards Rewriting Semantics of A Software Architecture Model*. The 8th International Conference of Quality Software, Oxford UK, Aug 12-13 2008.

[23] G. Argote-Garcia, P. Clarke, X. He, **Yujian Fu**. *A Formal Approach for Translating a SAM Architecture to PROMELA*. In Proceedings of SEKE'08: Nineteenth International Conference on Software Engineering and Knowledge Engineering. San Francisco, USA, July 1 – July 4, 2008.

[24] S. Li and S. King and E. Jones and **Yujian Fu** and X. Xhao and D. Price. *Multimedia Talents Among African American Students*. In Proceedings of The 16th Annual Conference of National Association of African American Studies. Baton Rouge, Louisiana, USA. February 11-16, 2008.

[25] **Yujian Fu**, Z. Dong, G. Argote-Garcia, Y. Shi, and X. He. *A Method of Validating Translation from SAM to Java*. In Proceedings of SEKE'07: Nineteenth International Conference on Software Engineering and Knowledge Engineering. Boston, USA, July 9 – July 11, 2007.

[26] **Yujian Fu**, Z. Dong, and X. He. *A Method for Realizing Software Architecture Design*. In Proceedings of QSIC'06: Sixth International Conference on Quality Software. Beijing, China, October 26 – 28, 2006.

[27] **Yujian Fu**, Z. Dong, and X. He. *Validating and Automating Composition of Web Services*. In Proceedings of ICWE'06: Sixth International Conference on Web Engineering, pages 217 – 224, Palo Alto, CA, USA, July 10-14, 2006. (Best Paper Session)

[28] **Yujian Fu**, Z. Dong, and X. He. *An Approach to Web Services Oriented Modeling and Validation*. In Proceedings of ICSE'06 workshop: The 2006 International Workshop on Service Oriented Software Engineering, Shanghai, China, May 27-28, 2006.

[29] Z. Dong, **Yujian Fu**, and X. He. *A Framework for Component-based System Modeling*. In Proceedings of SEKE'06: The eighth International Conference on Software Engineering and Knowledge Engineering, pages 290 – 295, San Francisco Bay, CA, USA, July 5-7, 2006.

[30] Z. Dong, **Yujian Fu**, and X. He. *An Integrated Runtime Monitoring Framework for Software Architecture Model Verification*. In Proceedings of The 9th IASTED International Conference on Software Engineering and Applications, Phoenix, AZ, USA, pages 106 – 111, November 14-16, 2005.

[31] **Yujian Fu**, Z. Dong, and X. He. *Formalizing and Validating UML Architecture Description of Web Systems*. In Proceedings of ICWE'06 workshop: Model-Driven Web Engineering (MDWE'06), Palo Alto, CA, USA, July 10-14, 2006.

[32] **Yujian Fu**, Z. Dong, and X. He. *An Approach to Validation of Software Architecture Model*. In Proceedings of APSEC'05: twelfth Asia-Pacific Software Engineering Conference (APSEC), December 15-17, 2005, TaiPei, Taiwan, China.

[33] **Yujian Fu**, Z. Dong, and X. He. *A Methodology of Automated Realization of a Software Architecture Design*. In Proceedings of SEKE'05: the 17th International Conference on Software Engineering and Knowledge Engineering, pages 412–417. Taipei, Taiwan, July 14 – 16, 2005.

[34] Z. Dong, **Yujian Fu**, and X. He. *Automated Runtime Validation of Software Architecture Design*. In Proceedings of 2nd International Conference on Distributed Computing & Internet Technology (ICDCIT 2005), Lecture Notes in Computer Science, Vol. 3816, pages 446 – 457, Bhubaneswar, India, December 22-24, 2005. (Best paper session)

[35] Z. Dong, **Yujian Fu**, and X. He. *UML Consistency Checking Through Transformation based Petri Net Framework*. The workshop of Consistency in Model Driven Engineering (CoMoDE), in conjunction with European Conference on Model Driven Architecture, Nuremberg, Germany. November 7 – 10th, 2005.

[36] Z. Dong, **Yujian Fu**, and X. He. *Deriving Hierarchical Predicate/Transition Nets from Statechart Diagrams*. In proceedings of the 15th International Conference on Software Engineering and Knowledge Engineering, pages 150 – 157. San Francisco, CA, U.S.A. July 1 – 3, 2003.

Projects

Current & past funded projects are:

- "Collaborative Project: Integrating Pervasive Computing and Mobile Security Research", NSF, 2014 to 2016.
- "Collaborative Project: Integrating Testing into CS/IT Courses Supported by WReSTT", NSF, 2013 to 2015.
- "Formal Specification Framework on the Multiple Robotics Collaboration", Air Force Research Lab, 2014.
- "Modeling & Verification of Humanoid Robots", Air Force Research Lab, 2012.
- "Architecture Driven Formal Analysis of Embedded System Evolution", Title III office, Alabama A&M University, 2009 - 2010.

Professional Services

[1] *Dynamic Analysis of Software Architecture Model*, Department of Computer Science, Florida A&M University, Feb 4, 2009 (Invited Talk)

[2] *Software Design Quality Assurance*, Department of Computer Science, University of Alabama At Nov 9, 2007 (Invited Talk)

[3] Student Advising

[4] Reviewer for 15 journals and conferences.

Affiliations

Member of ACM
Member of IEEE Computer Society
Member of ASEE