Jian Xiang

Curriculum Vitae
Sep.2022

Research Associate
John A. Paulson School of Engineering and Applied Sciences
Harvard University *jxiang@seas.harvard.edu*
150 Western Avenue, Boston, MA, 02134 *https://jianxiang.info*

Research Interests

The primary goal of my research is to advance the state of art of formal methods for modeling and verifying the correctness and security of cyber-physical systems, and to develop tools and techniques to help construct cyber-physical systems that are correct and secure. My broad research interests include security, formal verification, cyber-physical system, and programming language.

Education

- **Ph.D., Computer Science**
  University of Virginia, Charlottesville, VA, Dec.2016.
  Dissertation title: *Interpreted Formalism: Towards System Assurance and the Real-World Semantics of Software*
  Advisor: John Knight, Kevin Sullivan
- **M.E., Software Engineering**
  Tsinghua University, Beijing, China, Aug.2008.
  Thesis title: *SREM: A Service Requirements Elicitation Mechanism based on Ontology*
  Advisor: Lin Liu
- **B.S., Electronic Science and Technology**
  Huazhong University of Science and Technology, Wuhan, China, May 2005.

Research Exprience

- **Research Associate**
  Harvard University, Cambridge/Allston, MA Sep.2020 – Present
- **Postdoctoral Researcher**
  Harvard University, Cambridge, MA Sep.2017 – Aug.2020
- **Postdoctoral Researcher**
  University of Virginia, Charlottesville, VA Aug.2016 – May.2017
- **Research Intern**

IBM China Research Center, Beijing, China Jul.2006 – Sep.2006

Publications

Manuscripts Under Review/In Preparation

- *Extending Dynamic Logics with First-Class Relational Reasoning*. (under review)
  J. Xiang, N. Fulton, and S. Chong.
- *Quantitative Robustness Analysis of Sensor Attacks on Cyber-Physical Systems*. (in preparation)
  J. Xiang, M. Merrom, L. Ruggero, T. Simone, S. Chong.

Conference Paper

- *Relational Analysis of Sensor Attacks on Cyber-Physical Systems*.
  The 34th IEEE Computer Security Foundations Symposium (CSF), June 2021.
  J. Xiang, N. Fulton, and S. Chong.
- *Co-Inflow: Coarse-grained Information Flow Control for Java-like Languages*.
  The 42nd IEEE Symposium on Security and Privacy (S&P), May 2021.
  J. Xiang and S. Chong.
- *Is My Software Consistent with the Real World?*.
  The 18th International Symposium on High Assurance Systems Engineering (HASE), Jan. 2017.
  J. Xiang, J. Knight, and K. Sullivan.
- *Synthesis of Logic Interpretation*.
  The 17th International Symposium on High Assurance Systems Engineering (HASE), Jan. 2016.
  J. Xiang, J. Knight, and K. Sullivan.
- *Real-World Types and Their Application*.
  The 34th International Conference on Computer Safety, Reliability and Security (SAFECOMP), Sep. 2015.
  J. Xiang, J. Knight, and K. Sullivan.
- *SREM: A Service Requirements Elicitation Mechanism based on Ontology*.
  The 31st Annual IEEE International Computer Software and Applications Conference (COMPSAC). Jul. 2007
  J. Xiang, L. Liu, W. Qiao.

Book Chapter

- *A Rigorous Definition of Cyber-Physical Systems*.
  Trustworthy Cyber-Physical Systems. CRC Press, 2016.
  J. Knight, **J. Xiang**, and K. Sullivan.

PhD Thesis

- *Interpreted Formalism: Towards System Assurance and the Real-World Semantics of Software*
  PhD Thesis. University of Virginia. Aug. 2016.

Journal Paper

- *Security Design Based on Social Modeling*.
  Acta Electronica Sinica, vol. 34, no.12A, pp 2350-2354, Dec 2006.
  J. Xiang, L. Liu, E. Yu.

Workshop Paper

- *A Safety Condition Monitoring System*.
  The 3rd International Workshop on Assurance Cases for Software-intensive Systems, Sep. 2015.
  J. Knight, J. Rowanhill and **J. Xiang**.

Teaching Experience

- Teaching Assistant for *Advanced Software Development Techniques* Fall 2014, Spring 2014
  Office hours, grading, lab lectures
- Teaching Assistant for *Discrete Mathematics* Fall 2013
  Office hours, grading, lab lectures

Professional Activity

- *Program Committee*: The 16th Workshop on Programming Languages and Analysis for Security (PLAS 2021)
- *Journal Reviewer*: ACM Transactions on Programming Languages and Systems (TOPLAS 2022)

Invited Talk

- Amazon AWS Privacy Engineering Seminar
  Co-Inflow: Coarse-grained Information Flow Control for Java-like Languages
- NIO.io Security Seminar
  Relational Analysis of Sensor Attacks on Cyber-Physical Systems