

# Jian Xiang

Curriculum Vitae  
July 2024

Assistant Professor  
Software and Information System  
College of Computing and Informatics  
University of North Carolina at Charlotte

[jian.xiang@charlotte.edu](mailto:jian.xiang@charlotte.edu)  
*Personal Webpage*

## RESEARCH INTERESTS

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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 computer systems, especially cyber-physical systems, and to develop tools and techniques to help construct systems that are correct and secure. My broad research interests include security, formal verification, cyber-physical system, and programming language.

## EDUCATION

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- **Ph.D., Computer Science**  
University of Virginia, Charlottesville, VA  
Dissertation: *Interpreted Formalism: Towards System Assurance and the Real-World Semantics of Software*  
Advisor: John Knight
- **M.E., Software Engineering**  
Tsinghua University, Beijing, China  
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

## PROFESSIONAL EXPRIENCE

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- **Assistant Professor**  
UNC Charlotte, Charlotte, NC  
Aug.2023 – Present
- **Research Associate**  
Harvard University, Cambridge/Allston, MA  
Sep.2020 – Aug.2023
- **Postdoctoral Researcher**  
Harvard University, Cambridge, MA  
Sep.2017 – Aug.2020
- **Postdoctoral Researcher**  
University of Virginia, Charlottesville, VA  
Aug.2016 – May.2017

## PUBLICATIONS

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### Manuscripts Under Review

- *Formal Reasoning of Security for Industrial Robotic Manipulators*. (Under Review)  
**J. Xiang**, R. Ghosal, S. Ahmed, M. Juliato, V. Lesi, V. J. Reddi and M. R. Sastry.
- *Extending Dynamic Logics with First-Class Relational Reasoning*. (Under Review)  
**J. Xiang** and S. Chong.
- *Measuring Robustness in Cyber-Physical Systems under Sensor Attacks*. (Under Review)  
**J. Xiang**, R. Lanotte and S. Tini, S. Chong, and M. Merro.

### Refereed Conference Paper

- *Quantitative Robustness Analysis of Sensor Attacks on Cyber-Physical Systems*. [PDF](#)  
ACM International Conference on Hybrid Systems: Computation and Control (HSCC), May 2023  
S. Chong, R. Lanotte, M. Merro, S. Tini, and **J. Xiang** (all authors contributed equally)
- *Relational Analysis of Sensor Attacks on Cyber-Physical Systems*. [PDF](#)  
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*. [PDF](#)  
IEEE Symposium on Security and Privacy (S&P), May 2021.  
**J. Xiang** and S. Chong.
- *Is My Software Consistent with the Real World?*. [PDF](#)  
International Symposium on High Assurance Systems Engineering (HASE), Jan. 2017.  
**J. Xiang**, J. Knight, and K. Sullivan.
- *Synthesis of Logic Interpretation*. [PDF](#)  
International Symposium on High Assurance Systems Engineering (HASE), Jan. 2016.  
**J. Xiang**, J. Knight, and K. Sullivan.
- *Real-World Types and Their Application*. [PDF](#)  
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*. [PDF](#)  
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.

### Workshop Paper

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

## PhD Thesis

- *Interpreted Formalism: Towards System Assurance and the Real-World Semantics of Software*

## Preprint

- *Measuring Robustness in Cyber-Physical Systems under Sensor Attacks*. [PDF](#), arXiv preprint, 2024  
J. Xiang, R. Lanotte, S. Tini, S. Chong, and M. Merro.

## TEACHING EXPERIENCE

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### Instructor

- *ITIS 6200/8200 Principles of Information Security & Privacy* Fall 2024, Spring 2024, Fall 2023

## PROFESSIONAL ACTIVITY

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### Program Committee

- Workshop on Programming Languages and Analysis for Security (PLAS'21)
- ACM Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS'25)

### Journal Reviewer

- ACM Transactions on Programming Languages and Systems (TOPLAS'22)

## INVITED TALK

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- *Co-Inflow: Coarse-grained Information Flow Control for Java-like Languages*  
Amazon AWS Privacy Engineering Seminar
- *Co-Inflow: Coarse-grained Information Flow Control for Java-like Languages*  
NIO.io Security Seminar

## FUNDING

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### Internal grants

- Modeling and Verification of Correctness and Security for Autonomous Machines. UNC Charlotte. Faculty Research Grants. 2024-2025. \$8000.