

# Mohit Kumar Jangid

## *PhD in Cybersecurity*

Department of Computer Science and Engineering  
The Ohio State University, Columbus, Ohio, USA

+1-9530153503  
jangid.6@osu.edu  
mohitwrangler.github.io  
mohitWrangler



## Research Interests

Automated Formal Verification, System Security and Privacy, Trusted Execution Environment, Cryptography, Protocol Design, and Network Security

## Education

### 2017 – 2024 **Ph.D. in Cybersecurity**

The Ohio State University, Columbus, Ohio, USA  
GPA 3.74/4

*Thesis:* "Exploring Potential and Challenges of Symbolic Formal Verification in Security and Privacy"

*Advisors:* Dr. Zhiqiang Lin and Dr. Yinqian Zhang

*Note:* Initially admitted for Masters Program (2017-2019) which was converted to PhD in 2019

### 2009 – 2013 **Bachelor of Technology, Computer Engineering**

Malaviya National Institute of Technology, Jaipur, India  
CGPA 7.8/10

*Thesis Project:* Implemented DNS Poisoning using *Port Exhaustion Technique* over a vulnerable server supported by multi-threaded SSL-secured FTP and Shell-login server and client.



*Advisor:* Dr. Manoj Singh Gaur

## Awards and Honors

- 2024 Graduate Student Research Award, Department of Computer Science and Engineering, The Ohio State University.
- 2019 Sesquicentennial Student Scholar Leadership Program and the Scholarship, The Ohio State University.
- 2013 Spot Award for hard work and excellent automation of the project at MAQ Software, India.
- 2012 Pioneering implementation of Linux Device Driver during the internship at the Defense Research and Development Organization, India.
- 2006 1st position in Cluster Level Computer Science and Intel Exhibition, India.

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## Publications

- 2025 Christopher Ellis, Yue Zhang, **Mohit Kumar Jangid**, Shixuan Zhao, Zhiqiang Lin. "Deanonymizing Device Identities via Side-channel Attacks in Exclusive-use IoTs & Mitigation" *To appear in the Network and Distributed System Security (NDSS) Symposium*  
 PDF
- 2023 **Mohit Kumar Jangid**, Yue Zhang (co-first-author), and Zhiqiang Lin. "Extrapolating Formal Analysis to Uncover Attacks in Bluetooth Passkey Entry Pairing." *In Network and Distributed Systems Security (NDSS) Symposium*.  
 PDF  Artifact  Talk
- 2022 **Mohit Kumar Jangid**, Zhiqiang Lin. "Towards a TEE-based V2V Protocol for Connected and Autonomous Vehicles" *In Workshop on Automotive and Autonomous Vehicle Security (AutoSec)*.  
 PDF  Artifact  Talk
- 2021 **Mohit Kumar Jangid**, Guoxing Chen, Yinqian Zhang, Zhiqiang Lin. "Towards Formal Verification of State Continuity for Enclave Programs". *In 30th USENIX Security Symposium (USENIX Security 21)*,  
 PDF  Artifact  Talk

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## Grant Contribution

- 2023 "Advancing Security and Privacy of Bluetooth IoT via Formal Life Cycle Analysis and Modelling", National Security Agency (NSA), Science of Security, USA.  
Co-wrote the grant proposal with *PI*: Zhiqiang Lin, The Ohio State University *Budget*: \$500,000

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## Other Research Experiences

- Summer 2022 **Research Intern**, *CISPA Helmholtz Center for Information Security, Germany*  
*Supervised by*: Dr. Cas Cremers (cremers@cispa.de)  
  - Investigated the internal mechanics of the Tamarin-Prover and developed ideas to improve the formal technique.
- Summer 2012 **Research Intern**, *Defense Research and Development Organization, India*  
*Supervised by*: K Bhaskar (bhaskar.k@rcilab.in)  
  - Developed Linux device driver and an application program to configure, monitor, and analyze the 4-channel 1553B Military Standard PCI (65569i) card.

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## Teaching Experience

- Fall 2023 CSE 2421: Systems I: Introduction to Low-Level Programming and Computer Organization  
*The Ohio State University, Columbus, Ohio, USA*  
*Role*: Instructor, *Logistics*: 37 Undergraduate students, 4 Credit Hours, 1 Grader

## Student Organization Leadership

- 2023 – 2024 **Global Ambassador**, Office of International Affairs at The Ohio State University.
- Facilitated three global engagement nights to discuss cultures and traditions from around the world.
  - Coordinated four cultural tours to educate and engage international students.
- 2022 – 2023 **Student Leadership Advocate**, Office of Student Life at The Ohio State University.
- Facilitated five workshops on leadership topics for student organization leaders and university students.
  - Designed icebreaker activities and meaningful reflections to encourage participants to take on leadership roles.
- 2021 – 2022 **Treasurer**, SKY (Sudarshan Kriya Yoga by Art of Living) Mediation student organization at The Ohio State University.
- Organized multiple 3-day happiness retreats designed by the Art of Living organization.
  - Managed funding and logistics for team-building activities, happiness retreats, and operational resources.
- 2020 – 2021 **University Liaison**, International Friendship student organization at The Ohio State University.
- Coordinated multicultural festivals, including Diwali, Chinese Lunar New Year, and Eid, specifically for international students.
  - Collaborated with university departments to diversify and promote cultural events.

## Other Professional Services

- Mar 2024 **Group Leader**, International Buck-I-Serv Service Trip to Guatemala, Office of Student Life Student at The Ohio State University.
- Mar 2023 **Emcee**, Holi Festival at The Ohio State University organized by International Friendship, USA.
- Dec 2020 **Emcee**, Vision Conference organized by Bridges Internationals, USA.
- Mar 2011 **Coordinator**, ALOHA Technical Festival, Creative Art Society, Malaviya National Institute of Technology, Jaipur, India.

## Conference Services

Session chair Automotive and Autonomous Vehicle Security (AutoSec) Workshop, San Diego, California, 2022.

- External Review
- IEEE Symposium on Security and Privacy 2024, 2019
  - Annual Computer Security Applications Conference (ACSAC), 2024
  - IEEE Transactions on Dependable and Secure Computing, 2023
  - Network and Distributed System Security (NDSS), 2023
  - IEEE Transactions on Intelligent Transportation Systems, 2022
  - European Symposium on Research in Computer Security (ESORICS), 2022
  - Automotive and Autonomous Vehicle Security (AutoSec), 2022
  - Detection of Intrusions and Malware, and Vulnerability Assessment (DIMVA), 2019
  - IEEE/ACM International Conference on Automated Software Engineering, 2019
  - ACM Digital Threats: Research and Practice, 2019

## Presentation and Talks

### *Formalizing Unexplored Privacy Terrain: Allowlist Tracking*

- International Computer Science Institute, Berkeley, California, USA, July 2024.

### *Extrapolating Formal Analysis to Uncover Attacks in Bluetooth Passkey Entry Pairing.*

- CISPA Helmholtz Center for Information Security, Germany, July 2022.
- Network and Distributed System Security (NDSS) Symposium San Diego, California, March 2023.

### *Towards a TEE-based V2V Protocol for Connected and Autonomous Vehicles*

- Automotive and Autonomous Vehicle Security (AutoSec) Workshop, San Diego, California, April 2022.

### *Towards Formal Verification of State Continuity for Enclave Programs*

- 30th USENIX Security Symposium, August 2021.

## Acknowledged Research Contributions

- 2023 Scott W Duxbury, Dana L Haynie "Network embeddedness in illegal online markets: Endogenous sources of prices and profit in anonymous criminal drug trade." Socio-Economic Review.
- 2021 Scott W Duxbury, Dana L Haynie, "Shining a light on the shadows: Endogenous trade structure and the growth of an online illegal market." American Journal of Sociology.
- Developed an automated data crawler for the darknet trading markets on the Tor network. Python, GUI Automation
  - Identified and extracted measures, and built a network graph to analyze and derive strategies to deal with the illegal drug trade.

## Personal Source Code Release

### 2016 – 2017 **Visualize Graph Algorithm**

- Developed a Python platform with GDK-UI, multithreaded interactive functionality to visualize and control the steps of graph algorithms. Python, graph-tools, gdk-threads

### 2015 – 2017 **Android Automation Tools**

- Developed auto voice response definitions using Google Assistant, Calendar notification UI, Custom news radio, and TED Video downloader, Inspired by personal use case. Tasker, Autoapps, IFTTT

## Industry Experience

### Summer 2018 **Quality Assurance Intern, ANSYS Inc, Canonsburg, Pennsylvania USA.**

- Built an object-oriented schematic regression library from scratch for all available TwinBuilder (thermal and physical simulator for machines and automobiles) components. Python
- Designed and implemented an automated validation for create, move, copy-paste, flip, and rotate operations over simulated objects. Python

### 2013 – 2015 **Software Engineer, MAQ Software, India.**

- Designed and automated a testing suite for a terabyte-scaled data warehouse. MYSQL, MSBI
- Designed and integrated SQL Server Analysis Services (Multidimensional Database).
- Developed 20+ modules for full Windows automation and productive work organization. Auto-Hotkey

**Summer 2011 Developer Intern, Malaviya National Institute of Technology, Jaipur, India**

- Designed back-end database and dashboard webpage UI for student and employer recruitment automation system software. HTML CSS
- Developed functionality for student to view and apply for different job opportunities and employer to setup job and qualification information. JavaScript, PHP

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## Research References

**Dr. Zhiqiang Lin, Professor (advisor)**

Dept. of Computer Science and Engineering, The Ohio State University, Columbus, Ohio, USA

✉ zlin@cse.ohio-state.edu      📞 +1 614-292-0055

Webpage: <https://zhiqlin.github.io>

**Dr. Yinqian Zhang, Professor (co-advisor)**

Dept. of Computer Science and Engineering, Southern University of Science and Technology, Shenzhen, China

✉ zhangyq3@sustech.edu.cn      📞 +86 180-2546-5240

Webpage: <https://yinqian.org>

**Dr. Srinivasan Parthasarathy, Professor**

Dept. of Computer Science and Engineering, The Ohio State University, Columbus, Ohio, USA

✉ srini@cse.ohio-state.edu      📞 +1 614-292-2568

Webpage: <https://web.cse.ohio-state.edu/~parthasarathy.2>

**Dr. Manoj Singh Gaur, Director (advisor)**

Indian Institute of Technology, Jammu, India

✉ director@iitjammu.ac.in      📞 +91 191-257-0381

Webpage: <https://www.iitjammu.ac.in/director>

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## Professional and Leadership References

**Kala Coyan-McClure, Coordinator, Student Leadership Development**

Office of Student Life, The Ohio State University, Columbus, Ohio, USA

✉ coyan-mcclure.1@osu.edu      📞 +1 330-968-7399

Info: <https://lead.osu.edu/people/kala-coyan-mcclure>

**Kal Jordan-DeBruin, Global Engagement Program Assistant**

Office of International Affairs, The Ohio State University, Columbus, Ohio, USA

✉ jordan-debruin.1@osu.edu      📞 +1 937-825-3247

Info: <https://oia.osu.edu/directory/kal-jordan-debruin>