





MONOWAR HASAN

 School of Electrical Engineering & Computer Science
 Washington State University
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Current Appointment

- Assistant Professor** **January 2023 – Present**
School of Electrical Engineering and Computer Science
Washington State University (WSU), Washington, United States

Past Appointments

- Assistant Professor** **January 2021 – December 2022**
School of Computing
Wichita State University, Kansas, United States
- Affiliate Assistant Professor** **August 2021 – December 2022**
Electrical and Computer Engineering
Wichita State University, Kansas, United States
- Research Intern** **June – August 2019**
R&D Info Tech Labs, Toyota Motor North America, California, United States **May – August 2018**
- Student Research Associate** **May – August 2017**
IoT Security and Privacy Center, SRI International, California, United States

Education

- Ph.D. [Computer Science]** **December 2020**
University of Illinois at Urbana-Champaign (UIUC), Illinois, United States
Dissertation: *Integrating security into real-time cyber-physical systems*
 (URI: <http://hdl.handle.net/2142/109407>)
- M.Sc. [Electrical and Computer Engineering]** **May 2015**
University of Manitoba (UM), Manitoba, Canada
Thesis: *Radio resource management for relay-aided device-to-device communication*
 (URI: <http://hdl.handle.net/1993/30531>)
- B.Sc. [Computer Science and Engineering]** **April 2012**
Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh

Research Interests – Systems, Security, and Networking

- Real-Time Cyber-Physical Systems and Internet-of-Things Security
- Management/Analysis of Autonomous and Industrial Control Systems
- Security and Resource Allocation in Wireless Communications and Software-defined Networking
- Security and Management of Vehicle-to-Vehicle Communications

My main contributions have, so far, been in the real-time systems and cellular wireless communities. Significant contributions include (a) methods to improve the resiliency of such systems and (b) design, implementation, and testing of novel security and scheduling frameworks to create robust cyber-physical and wireless communication platforms.

Teaching Interests

- Computer Security & Cryptography
 - Real-Time Systems, Embedded Systems
 - Secure Cyber-Physical Systems & Internet-of-Things
 - Systems Programming
 - Operating Systems
 - Wireless Communications
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Highlights


- **Publications:** 25+ peer-reviewed papers in top conferences and journals (ESORICS, RTSS, ECRTS, DATE, ICCPS, INFOCOM, IoT, TWC, TC, Network, Comm. Mag.)
 - **Awards:** NSF ERI and CRII awards, Best student paper and outstanding paper awards at a premier real-time conference (RTSS'16), C.L. and Jane W.-S. Liu Award, University of Manitoba Graduate Fellowship
 - **Impact:** 2200+ citations with h-index=18
 - **Service:** TPC and Reviewer for multiple top-tier journals/conferences (IoT, RTS, TECS, TCAD, Access, TMC, TWC, ICCPS, RTSS, RTAS) and federal agency funding panels (NSF, ARPA-E)
 - **Collaborations:** Multiple ongoing and past collaborations with industry, national lab and university
 - *Current Collaborations*
 - Pacific Northwest National Laboratory (Since 2024), German Aerospace Center–DLR (Since 2023)
 - Technical University of Munich (Since 2023), The University of Texas at Arlington (Since 2023), University of Colorado–Colorado Springs (Since 2021), Wichita State University (Since 2021)
 - *Past Collaborations*
 - Toyota Research (2018-2020), Visa Research (2018-2019), SRI International (2017)
 - Auburn University (2020-2024), University of Waterloo (2015-2021), Oregon State University (2015-2021), Tampere University of Technology (2016-2017), Nanyang Technological University (2015-2016), Sungkyunkwan University (2015-2016)
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Research Support

- **PI**, NSF CNS-2345653, “CSR: SMALL: Foundations of software-defined real-time networking,” National Science Foundation, \$599,943, 08/01/2024-07/31/2027.
 - **PI**, NSF CNS-2152768, “CRII: CNS: Integrating security tasks into multicore real-time systems,” National Science Foundation, \$175,000 + \$8,000 (REU support), 06/01/2022-05/31/2024 (no cost extension till 05/31/2025).
 - **PI**, NSF ECCS-2138295, “ERI: ECCS: Concealing side-channels in real-time schedulers,” National Science Foundation, \$200,000, 03/01/2022-02/29/2024.
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Publications

Note:

- Citation statistics are obtained from Google Scholar (as of February 2024).
- Asterisk (*) represents authors who contributed equally to the work.
- Plus (+) denotes an undergraduate researcher who contributed to the work.
- Name is the lead student (first) author I advise/co-advise.
- Name highlights first-author students/postdocs with whom I collaborate and co-supervise closely.
- The icon ★ denotes flagship conferences/journals/magazines, and  represents CSRankings indexed venues.

Total citations	2707
h-index	20
i10-index	24

📖 Book Chapter

1. **Wiley-5G'16** **M. Hasan** and E. Hossain, "Distributed resource allocation in 5G cellular networks," book chapter in *Towards 5G: Applications, Requirements & Candidate Technologies*, Wiley, 2016. [cited **69** times]

📖 Journals and Magazines

14. ★ **CSUR'24** **M. Hasan**, A. Kashinath, C. Chen, and S. Mohan, "SoK: Security in real-time systems," *ACM Computing Surveys*, vol. 56, no. 9, pp. 1–31, Apr. 2024.
13. ★ **TOPS'23** A. Bansal, A. Kandikuppa, **M. Hasan**, C. Chen, A. Bates, and S. Mohan, "System auditing for real-time systems," *ACM Transactions on Privacy and Security*, vol. 26, no. 50, pp. 1–37, Nov. 2023.
12. **ACCESS'23** **M. Babar** and **M. Hasan**, "Trusted deep neural execution – A survey," *IEEE Access*, vol. 11, pp. 45736-45748, May 2023. [cited **1** time]
11. **TCPS'23** **M. Hasan**, S. Mohan, R. Bobba, and R. Pellizzoni, "Beyond just safety: Delay-aware security monitoring for real-time control systems," *ACM Transactions on Cyber-Physical Systems*, vol. 6, no. 3, pp. 1–25, Jul. 2022. [cited **3** times]
10. **TIV'20** **M. Hasan**, S. Mohan, T. Shimizu, H. Lu, "Securing vehicle-to-everything (V2X) communication platforms," *IEEE Transactions on Intelligent Vehicles*, vol. 5, no. 4, pp. 693-713, Dec. 2020. [cited **173** times]
9. ★ **IoT'19** F. Abdi, C. Chen, **M. Hasan**, S. Liu, S. Mohan, and M. Caccamo, "Preserving physical safety under cyber attacks," *IEEE Internet of Things Journal*, vol. 6, no. 4, pp. 6285-6300, Aug. 2019. [cited **49** times]
8. **Sensors'18** C. Chen*, **M. Hasan***, and S. Mohan, "Securing real-time Internet-of-things," *Sensors*, vol. 18, no. 12, Dec. 2018. [cited **50** times]
7. **TCOM'15** **M. Hasan** and E. Hossain, "Distributed resource allocation for relay-aided device-to-device communication under channel uncertainties: A stable matching approach," *IEEE Transactions on Communications*, vol. 63, no. 10, pp. 3882-3897, Oct. 2015. [cited **97** times]
6. **IMM'15** E. Hossain and **M. Hasan**, "5G cellular: Enabling technologies and research challenges," *IEEE Instrumentation & Measurement Magazine*, vol. 18, no. 3, pp. 11-21, Jun. 2015. ([top most frequently downloaded document from IEEE Xplore for IM Magazine in June 2015-June 2016](#)) [cited **743** times]
5. **TCOM'15** M. Rasti, **M. Hasan**, L. Le, and E. Hossain, "Distributed uplink power control for multi-cell cognitive radio networks," *IEEE Transactions on Communications*, vol. 63, no. 3, pp. 628-642, Mar. 2015. [cited **35** times]
4. ★ **Network'15** **M. Hasan**, E. Hossain, S. Balasubramaniam, and Y. Koucheryavy, "Social behavior in bacterial nanonetworks: Challenges and opportunities," *IEEE Network*, vol. 29, no. 1, pp. 26-34, Jan. 2015. [cited **14** times]
3. ★ **TWC'14** **M. Hasan** and E. Hossain, "Distributed resource allocation for relay-aided device-to-device communication: A message passing approach," *IEEE Transactions on Wireless Communications*, vol. 13, no. 11, pp. 6326-6341, Nov. 2014. [cited **113** times]
2. ★ **TWC'14** **M. Hasan**, E. Hossain, and D. I. Kim, "Resource allocation under channel uncertainties for relay-aided device-to-device communications underlying LTE-A cellular networks," *IEEE Transactions on Wireless Communications*, vol. 13, no. 4, pp. 2322-2338, Apr. 2014. [cited **169** times]
1. ★ **COMMAG'13** **M. Hasan**, E. Hossain, and D. Niyato, "Random access for machine-to-machine communication in LTE-Advanced networks: Issues and approaches," *IEEE Communications Magazine*, vol. 51, no. 6, pp. 86-93, Jun. 2013. [cited **662** times]

📖 Refereed Conferences

14. ★ **ECRTS'24** **M. Babar** and **M. Hasan**, "DeepTrust^{RT}: Confidential deep neural inference meets real-time!," in Proc. of *Euromicro Conference on Real-Time Systems (ECRTS)*, pp. 10:1–10:24, Jul. 2024.
13. **ISORC'24** Z. Hammadeh, **M. Hasan**, and M. Hamad, "Securing real-time systems using schedule reconfiguration," in Proc. of *International Symposium on Real-Time Distributed Computing (ISORC)*, pp. 1-10, May 2024.

12. **ISORC'24** [M. Babar](#) and **M. Hasan**, "A new covert channel in fixed-priority real-time multiframe tasks," in Proc. of *International Symposium on Real-Time Distributed Computing (ISORC)*, pp. 1-6, May 2024 (Short Paper).
11. **ICPE'24** [S. Sarkar](#)*, [M. Babar](#)*, M. Hassan, **M. Hasan**, and S. Santu, "Processing natural language on embedded devices: How well do Transformer models perform?," *ACM/SPEC International Conference on Performance Engineering*, pp. 211-222, May 2024. [cited 2 times]
10. **ISORC'23** **M. Hasan** and S. Mohan, "You can't always check what you wanted: Selective checking and trusted execution to prevent false actuations in real-time Internet-of-things," in Proc. of *International Symposium on Real-Time Distributed Computing (ISORC)*, pp. 42-53, May 2023. [cited 1 time]
9. **ESORICS'22** A. Bansal, A. Kandikuppa, C. Chen, **M. Hasan**, A. Bates, and S. Mohan, "Towards efficient auditing for real-time systems," in Proc. of *European Symposium on Research in Computer Security (ESORICS)*, pp. 614-634, Sep. 2022. [cited 2 times]
8. ★ **INFOCOM'21** A. Kashinath*, **M. Hasan***, R. Kumar, S. Mohan, R. Bobba, and S. Padhy, "Safety critical networks using commodity SDNs," in Proc. of *IEEE International Conference on Computer Communications (INFOCOM)*, pp. 1-10, May 2021. [cited 1 time]
7. **DATE'20** **M. Hasan**, S. Mohan, R. Pellizzoni, and R. Bobba, "Period adaptation for continuous security monitoring in multicore systems," in Proc. of *Design, Automation and Test in Europe (DATE)*, pp. 430-435, Mar. 2020. [cited 5 times]
6. **ICCPs'18** F. Abdi, C. Chen, **M. Hasan**, S. Liu, S. Mohan, and M. Caccamo, "Guaranteed physical security with restart-based design for cyber-physical systems," in Proc. of *ACM/IEEE International Conference on Cyber-Physical Systems (ICCPs)*, pp. 10-21, Apr. 2018. [cited 63 times]
5. **DATE'18** **M. Hasan**, S. Mohan, R. Pellizzoni, and R. Bobba, "A design-space exploration for allocating security tasks in multicore real-time systems," in Proc. of *Design, Automation and Test in Europe (DATE)*, pp. 225-230, Mar. 2018. [cited 34 times]
4. ★ **CSR** **RTSS'17** R. Kumar, **M. Hasan**, S. Padhy, K. Evchenko, L. Piramanayagam+, S. Mohan, and R. Bobba, "End- to-end network delay guarantees for real-time systems using SDN," in Proc. of *IEEE Real-Time Systems Symposium (RTSS)*, pp. 231-242, Dec. 2017. [cited 95 times]
3. ★ **ECRTS'17** **M. Hasan**, S. Mohan, R. Pellizzoni, and R. Bobba, "Contego: An adaptive framework for integrating security tasks in real-time systems," in Proc. of *Euromicro Conference on Real-Time Systems (ECRTS)*, vol. 76, pp. 23:1-23:22, Jun. 2017. [cited 24 times]
2. ★ **CSR** **RTSS'16** **M. Hasan**, S. Mohan, R. Bobba, and R. Pellizzoni, "Exploring opportunistic execution for integrating security into legacy hard real-time systems," in Proc. of *IEEE Real-Time Systems Symposium (RTSS)*, pp. 123-134, Nov. 2016. (*received Outstanding Paper and Best Student Paper award*) [cited 42 times]
1. **ICC'15** **M. Hasan** and E. Hossain, "Distributed resource allocation in D2D-enabled multi-tier cellular networks: An auction approach," in Proc. of *IEEE International Conference on Communications (ICC)*, pp. 4552-4557, Jun. 2015. [cited 77 times]

▼ Refereed Workshops and Short Papers

11. **CPSIoTSec'22** [M. Babar](#) and **M. Hasan**, "Real-time scheduling of TrustZone-enabled DNN workloads," in Proc. of *ACM Joint Workshop on CPS & IoT Security and Privacy (CPSIoTSec)*, pp. 63-69, Nov. 2022. [cited 2 times]
10. **CPSIoTSec'22** [V. Banerjee](#), S. Hounsinou, H. Olufowobi, **M. Hasan**, and G. Bloom, "Secure reboots for real-time cyber-physical systems," in Proc. of *ACM Joint Workshop on CPS & IoT Security and Privacy (CPSIoTSec)*, pp. 27-33, Nov. 2022.
9. **RTAS-BP'22** [M. Aguida](#) and **M. Hasan**, "Work-in-Progress: Exploring schedule-based side-channels in TrustZone-enabled real-time systems," in Proc. of *IEEE Real-Time and Embedded Technology and Applications Symposium, (RTAS), Brief Presentations (BP) track*, pp. 301-304, May 2022. [cited 1 time]
8. **RTSS-BP'21** [S. Hounsinou](#), V. Banerjee, C. Peng, **M. Hasan**, and G. Bloom, "Work-in-Progress: Enabling secure boot for real-time restart-based cyber-physical systems," in Proc. of *IEEE Real-Time Systems Symposium (RTSS), Brief Presentations (BP) track*, pp. 524-527, Dec. 2021.

7. **SecSDN'20** A. Kashinath, **M. Hasan**, S. Mohan, R. Bobba, and R. Mittal, "Improving dependability via deadline guarantees in commodity real-time networks," in Proc. of *IEEE GLOBECOM Workshop on Secure and Dependable Software-defined Networking for Sustainable Smart Communities (SecSDN)*, pp. 1-6, Dec. 2020.
6. **IoT&P'19** **M. Hasan** and S. Mohan, "Protecting actuators in safety-critical IoT systems from control spoofing attacks," in Proc. of *ACM Workshop on the Internet of Things Security and Privacy (IoT S&P)*, pp. 8-14, Nov. 2019. [cited 27 times]
5. **CPS-SPC'17** I. Agadacos, C. Chen, M. Campanelli, P. Anantharaman, **M. Hasan**, B. Copos, T. Lepoint, M. Locasto, G. Ciocarlie, and U. Lindqvist, "Jumping the air gap: Modeling cyber-physical attack paths in the Internet-of-Things," in Proc. of *ACM Workshop on Cyber-Physical Systems Security & Privacy (CPS-SPC)*, pp. 37-48, Nov. 2017. [cited 46 times]
4. **RTN'17** R. Kumar, **M. Hasan**, S. Padhy, K. Evchenko, L. Piramanayagam⁺, S. Mohan, and R. Bobba, "Dependable end-to-end delay constraints for real-time systems using SDN," in Proc. of *International Workshop on Real-Time Networks (RTN)*, Jun. 2017. [cited 11 times]
3. **CERTS'16** **M. Hasan**, S. Mohan, R. Bobba, and R. Pellizzoni, "A server model to integrate security tasks into fixed-priority real-time systems," in Proc. of *Workshop on Security and Dependability of Critical Embedded Real-Time Systems (CERTS)*, pp. 61-68, Nov. 2016. [cited 2 times]
2. **CERTS'16** F. Abdi*, **M. Hasan***, S. Mohan, D. Agarwal⁺, and M. Caccamo, "ReSecure: A restart-based security protocol for tightly actuated hard real-time systems," in Proc. of *Workshop on Security and Dependability of Critical Embedded Real-Time Systems (CERTS)*, pp. 47-53, Nov. 2016. [cited 25 times]
1. **GC-WKSP'13** **M. Hasan** and E. Hossain, "Resource allocation for network-integrated device-to-device communications using smart relays," in Proc. of *IEEE Globecom Workshop on Device-to-Device (D2D) Communication With and Without Infrastructure*, pp. 597-602, Dec. 2013. [cited 37 times]

▼ Posters and Presentations

9. **SouthNLP'24** S. Sarkar, M. Babar, **M. Hasan**, S. Santu, "LLMs as on-demand customizable service," *1st South NLP Symposium (SouthNLP)*, Apr. 2024.
8. **CANSec'22** M. Aguida, S. Salinas, and **M. Hasan**, "Distributed misbehavior detection in UAV flocks," *15th Central Area Networking and Security Workshop (CANSec)*, Oct. 2022.
7. **CANSec'21** C. Okoro⁺ and **M. Hasan**, "Exploring containerization for protecting unmanned robotic vehicles," *14th Central Area Networking and Security Workshop (CANSec)*, Nov. 2021.
6. **CREDC'20** A. Kashinath, **M. Hasan**, S. Mohan, and R. Bobba, "Advanced networking for resilient energy delivery systems," *CREDC Industry Workshop*, Feb. 2020.
5. **CREDC'18** R. Kumar, **M. Hasan**, A. Kashinath, S. Mohan, R. Bobba, and S. Padhy, "Delay-aware SDNs: Improved management of networks in energy delivery systems," *CREDC Industry Workshop*, Sep. 2018.
4. **MidSec'18** **M. Hasan**, C. Chen, A. Ghassami, S. Mohan, and N. Kiyavash, "Securing dynamic-priority real-time systems using schedule obfuscation," *Midwest Security Workshop*, Apr. 2018.
3. **CREDC'17** R. Kumar, **M. Hasan**, K. Evchenko, S. Padhy, S. Mohan, and R. Bobba, "Dependable end-to-end delay constraints for EDS control networks using SDNs," *CREDC Industry Workshop*, Mar. 2017.
2. **SOS'16** D. Agarwala⁺, **M. Hasan**, F. Abdi, and S. Mohan, "Restart and secure: An approach to enhance security in real-time cyber-physical systems," *Illinois Science of Security (SoS) Summer Poster Session*, Jul. 2016.
1. **SOS'16** L. Piramanayagam⁺, S. Padhy, **M. Hasan**, and S. Mohan, "Precise timing analysis of Open vSwitch for hard real-time applications," *Illinois Science of Security (SoS) Summer Poster Session*, Jul. 2016.

▼ Patent

1. **US-Patent'20** G. Ciocarlie, I. Agadacos, C. Chen, M. Campanelli, P. Anantharaman, **M. Hasan**, U. Lindqvist, M. Locasto, B. Copos, T. Lepoint, and M. Filippone, "Modeling cyber-physical attack paths in the Internet-of-things," U.S. Patent US20200162500A1, May. 2020. [cited 14 times]

▼ Technical Report (Not Peer-Reviewed)

3. **OSTI'24** M. Rahman, K. Piryani, A. Sanchez, S. Munikoti, L. Torre, M. Levin, M. Akbar, M. Hossain, **M. Hasan**, M. Halappanavar, "Retrieval augmented generation for robust cyber defense," Pacific Northwest National Laboratory (PNNL) Tech. Report, PNNL-36792, Nov. 2024.
2. **arXiv'24** S. Sarkar, M. Babar, **M. Hasan**, and S. Karmaker, "LLMs as on-demand customizable service," arXiv preprint arXiv:2401.16577, Jan. 2024.
1. **arXiv'19** C. Chen, **M. Hasan**, M., Ghassami, S. Mohan, and Negar Kiyavash, "REORDER: Securing dynamic-priority real-time systems using schedule obfuscation," arXiv preprint arXiv:1806.01393, Apr. 2019. [cited **11** times]

Awards and Honors

Research and Scholarly Awards

- C.L. and Jane W.-S. Liu Award **April 2017**
Dept. of Computer Science, University of Illinois at Urbana-Champaign
- Feng Chen Memorial Award **April 2017**
Dept. of Computer Science, University of Illinois at Urbana-Champaign
- Best Student Paper Award **December 2016**
2016 IEEE Real-Time Systems Symposium (RTSS)
- Outstanding Paper Award **December 2016**
2016 IEEE Real-Time Systems Symposium (RTSS)
- Finalist, Symantec Research Labs Graduate Fellowship **December 2016**
Symantec Corporation, USA
- Research and Teaching Assistantship **August 2015 – December 2020**
Dept. of Computer Science, University of Illinois at Urbana-Champaign
- University of Manitoba General Award **November 2014**
University of Manitoba
- University of Manitoba Graduate Fellowship (UMGF) **July 2013 – June 2014**
Faculty of Graduate Studies, University of Manitoba
- International Graduate Student Entrance Scholarship (IGSES) **September 2012 – April 2013**
Faculty of Graduate Studies, University of Manitoba
- Professor Dr. Ahmad Ullah and Chemanara Ahmed Ullah Trust Fund Scholarship **2010**
Bangladesh University of Engineering and Technology
- Dean's List Award for academic excellence in Level-2, 3, and 4 **2009 – 2011**
Bangladesh University of Engineering and Technology
- University Merit Scholarship **2009 – 2011**
Bangladesh University of Engineering and Technology
- Dhaka Education Board Scholarship **2007 – 2010**
Ministry of Education, Dhaka, Bangladesh

Travel Awards

- Conference Travel Grant **October 2019**
Graduate College, University of Illinois at Urbana-Champaign
- NSF/IEEE Student Travel Grant **November 2016**
Sponsored by NSF and IEEE
- UMGSA Conference Grant **June 2015**
University of Manitoba Graduate Students' Association
- Graduate Student Travel Award **September 2013**
Faculty of Graduate Studies, University of Manitoba

- Swedish-Bangladesh Trust Fund Travel Grant
Economic Relations Division, Ministry of Finance, Bangladesh

December 2013

Teaching and Curriculum Development

• Washington State University

- CPTS 360: Systems Programming Spring 2025, 2024; Fall 2024, 2023
Revised and revamped in 2023
- CPTS 439: Cyber Security of Critical Infrastructure Systems Spring 2024, 2025
New course designed in 2024

• Wichita State University

- CS 656: Introduction to Cybersecurity Spring 2022
- CS 898CD: Trusted Execution for Embedded Systems Fall 2022, Fall 2021
New course developed in 2021
- CS 898CC: Security for Real-Time Internet-of-Things Spring 2021
New course developed in 2021

• University of Illinois at Urbana-Champaign

- **Teaching Assistant** Fall 2019
CS233: Computer Architecture
- **Co-Instructor, Programming** Fall 2017–Spring 2018
CS@ILLINOIS Outreach Program, Urbana Middle School, Illinois, US
 - * Co-taught programming using the *Scratch* programming language to middle school students

Advising

📌 Current Graduate Students

- **Ph.D.** Tamim Ahmed, Fall 2024 – Present
Dissertation topic: *Exploring cybersecurity issues in digital agriculture*
- **M.Sc.** Yuqun Song, Fall 2023 – Present
Thesis topic: *Enabling real-time capabilities on programmable switches*
- **Ph.D.** Fakhruddin Babar, Fall 2021 – Present
Dissertation topic: *Exploring trusted and lightweight machine learning models for real-time computing*
 - Recipient of the 2024 Alfred Suksdorf Memorial Scholarship from Voiland College of Engineering and Architecture (VCEA)

📌 Graduated Students

- Mirza Sabra Shahid, MSc., (Project), Wichita State University, Summer 2023
Project title: *An exploration of integrating priority scheduling on TrustZone*

✔ Undergraduate Students

▷ Washington State University

- Andrew Varkey, Fall 2024 – Present
Topic: *Trusted execution environments for real-time microcontrollers*
- Moises Carranza, Spring 2023 – Present
Topic: *Adapting Linux containers for autonomous vehicle controllers*

▷ Wichita State University

- Zarin Iffat Mira, Summer 2022-Fall 2022
Topic: *TrustZone-enabled real-time ML*
- Edwin Lopez, Summer 2022-Fall 2022
Topic: *Human-robot interaction for smart homes*
- Jonathan Spachek, Spring 2022-Summer 2022
Topic: *Securing distributed UAV swarms*
- Erick Oduniyi, Summer-Fall 2021
Topic: *Machine learning for real-time edge computing*
- Chidera Okoro, Summer-Fall 2021
Topic: *Sandboxing unmanned robotic vehicles*
- Hasan Qamber, Summer 2021
Topic: *Security for unmanned aerial vehicles*

✔ Undergraduate Capstone Project Mentoring

- Faculty Mentor: Team Carrick (Yashar Ghavidel, Devin Moore, Jagdish Singh, Joel Stepan), Fall 2023-Spring 2024
Topic: *Developing a real-time meter test system*
Industry Sponsor: Schweitzer Engineering Laboratories, Pullman, WA

✔ Graduate Thesis and Project Committees

▷ Washington State University

PhD Priliminary Exam

- Yu Nong (Advisor: Dr. Haipeng Cai), December 2024

PhD Qualifying Exam

- Jiahui Zhu (Advisor: Honghao Wei), November 2024
- Yassine Chemingui (Advisor: Dr. Jana Doppa), October 2024
- Truc Duong [Chair] (Advisor: Dr. Anna Wisniewska), May 2024
- Mohammed Amine Gharsallaoui (Advisor: Dr. Jana Doppa), May 2024
- Mohammad Fakhruddin Babar (Advisor: Dr. Monowar Hasan), November, 2023

MS Thesis

- Asif Zaman, M.Sc. (Thesis), July 2024
Thesis title: *Understanding the Validity of Real-world Security Patches*
Advisor: Dr. Haipeng Cai

- Andrii Zhuravchak, M.Sc. (Thesis), April 2023
Thesis title: *Energy-efficient wearable activity recognition through activity-aware sensor data compression and exploring the usage of ultra-wideband radars for HAR*
Advisor: Dr. Ganapati Bhat

MS Project

- Yi Chou, Fall 2024 (Chair)
- Priyadharshini Damodharan, Fall 2024 (Chair)
- Abrar Akhyer Abir, Spring 2024 (Chair)
- Priyanka Ghosh Dastidar, Spring 2024

▷ **Wichita State University**

- Harsha Siddapura Gnaneshwara, M.Sc. (Project), May 2022
Project title: *Obesity estimation based on eating and physical conditions*
Advisor: Dr. Ajita Rattani
- Prajakta Lasanpure, M.Sc. (Project), May 2022
Project title: *Ocular recognition across gender using hand-crafted features*
Advisor: Dr. Ajita Rattani
- Saideshwar Kotha, M.Sc. (Project), December 2021
Project title: *Fire localization using deep learning*
Advisor: Dr. Ajita Rattani
- Vinduja Vinod, M.Sc. (Project), December 2021
Project title: *Driver's drowsiness detection system*
Advisor: Dr. Ajita Rattani
- Libnah Pratheeth Bollam, M.Sc. (Project), July 2021
Project title: *Few shot learning for mobile user authentication*
Advisor: Dr. Ajita Rattani
- Santhosh Jothimani, M.Sc. (Project), July 2021
Project title: *Vision transformer for ocular recognition*
Advisor: Dr. Ajita Rattani
- Varsha Nagaraj, M.Sc. (Thesis), June 2021
Thesis title: *Design and evaluation of a remote assistance application for persons with visual impairments*
Advisor: Dr. Vinod Namboodiri
- Wise Osagiej, M.Sc. (Thesis), June 2021
Thesis title: *Ride-share for people with disabilities*
Advisor: Dr. Vinod Namboodiri
- Aman Kumar Gupta, M.Sc. (Project), May 2021
Project title: *Detecting botnets hidden in DNS over HTTPS traffic: An autoencoder approach*
Advisor: Dr. Sergio Salinas
- Maciej Berdychowski, M.Sc. (Thesis), April 2021
Thesis title: *Using decoy documents to detect masquerade attacks*
Advisor: Dr. Sergio Salinas

Media Coverage

- *NSF grant aims to improve resilience of safety-critical networks*
(Article on NSF project enhancing cyber-physical network resiliency)
WSU Insider newsletter, Washington State University
Link: <https://tinyurl.com/cps-nsf-project-24>

November 2024

- *Inspiring future programmers* **October 2018**
(Article about teaching middle school students as part of CS@ILLINOIS outreach program)
CSL Uplink newsletter, University of Illinois at Urbana-Champaign
Link: <https://tinyurl.com/inspiringfutureprogrammers>
 - *Featured student (Celebration of Excellence student awards recipient)* **November 2017**
CLICK! Magazine, Vol. 2, 2017, Dept. of Computer Science, University of Illinois at Urbana-Champaign
 - *Newly developed security mechanism aims to guard existing real-time systems against cyberattacks*
(Article about an RTSS'16 paper solving real-time security problem that received Outstanding Paper and Best Student Paper award)
Dept. of Computer Science, University of Illinois at Urbana-Champaign newsletter
Link: <https://tinyurl.com/guard-rts>
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Service

Service to the Community

- **Community Engagement**
 - ◇ Member, Computing Research Association (CRA) Survey Committee **August 2024 – Present**
- **Conference/Workshop Organization**
 - ◇ **Steering Committee Member**
International Symposium on AI for Agriculture, in conjunction with AAAI Fall Symposium Series, 2024
 - ◇ **Chair**
First Workshop on Real-Time Autonomous Systems Security (RTAutoSec), in conjunction with ECRTS, 2024
 - ◇ **Organizer (Northwest Region)**
First Workshop on Building a Research Collaboration Network in Agriculture Cybersecurity, 2024
 - ◇ **General Chair**
Central Area Networking and Security Workshop (CANSec), 2022
 - ◇ **Web Chair**
ACM Workshop on CPS & IoT Security and Privacy (CPSIoTSec), 2020, 2021
 - ◇ **Web Chair**
ACM Workshop on CPS & IoT Security and Privacy (CPSIoTSec), 2020, 2021
 - ◇ **Artifact Evaluation Chair**
IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), 2025
- **Technical Program Committee**
 - ◇ IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), 2025, 2024, 2022
 - ◇ IEEE International Symposium On Real-Time Distributed Computing (ISORC), 2025
 - ◇ ACM Cyber-Physical System Security Workshop (CPSS), 2025, 2024
 - ◇ IEEE International Conference on VLSI Design (VLSID), 2025, 2024
 - ◇ AAAI International Symposium on AI for Agriculture, 2024
 - ◇ ACM Workshop on CPS & IoT Security and Privacy (CPSIoTSec), 2024, 2022, 2021
 - ◇ Euromicro Conference on Real-Time Systems (ECRTS), 2024
 - ◇ DATE Initiative on Autonomous Systems Design (ASD), 2024
 - ◇ IEEE Vehicular Networking Conference (VNC), 2024, 2023, 2021
 - ◇ International Conference on Applied Cryptography and Network Security (ACNS), 2024
 - ◇ IEEE Real-Time Systems Symposium (RTSS), 2023, 2022, 2021
 - ◇ IEEE Workshop on Top Picks in Hardware and Embedded Security (TopPicks), 2023, 2021
 - ◇ IEEE Vehicular Technology Conference (VTC-Spring), 2022
 - ◇ IEEE International Workshop on Advances in Fog/Edge Computing (AFEC), 2022
 - ◇ IEEE Real-Time Systems Symposium (RTSS) Industrial Challenge, 2022

- **Editorial Board Member**
 - ◊ Real-time and Cyber-physical Systems Track, Journal of Systems Research (JSys) **January 2021 – Present**
- **Federal Agency Review Panels**
 - ◊ Graduate Research Fellowship Program (GRFP) **Spring 2025**
National Science Foundation (NSF)
 - ◊ Advanced Research Projects Agency-Energy (ARPA-E) **Summer 2024**
Department of Energy (DoE)
 - ◊ Secure and Trustworthy Cyberspace (SaTC) **Spring 2024**
National Science Foundation (NSF)
 - ◊ Directorate for Engineering (ENG) **Spring 2024, Spring 2023**
National Science Foundation (NSF)
 - ◊ Directorate for Computer and Information Science and Engineering (CISE) **Spring 2023, Spring 2021**
National Science Foundation (NSF)
- **Artifact Evaluation Committee**
 - ◊ IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), 2020
- **Best Paper Award Committee**
 - ◊ IEEE Real-Time Systems Symposium (RTSS), 2021
- **Session Chair**
 - ◊ IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), 2022 [Session 7: Real-time AI]
 - ◊ IEEE Vehicular Networking Conference (VNC), 2021 [Session 7: Implementation]
- **Reviewer**
 - **Journals/Magazines**
 - ◊ IEEE Transactions on Intelligent Vehicles, 2024, 2020
 - ◊ IEEE Transactions on Emerging Topics in Computing, 2023
 - ◊ IEEE Security & Privacy, 2023
 - ◊ IEEE Embedded Systems Letters, 2023
 - ◊ IEEE Design & Test, 2023
 - ◊ IEEE Access, 2023, 2021, 2018
 - ◊ ACM Distributed Ledger Technologies, 2022
 - ◊ IEEE Transactions on Computers, 2022
 - ◊ IEEE Transactions on Wireless Communications, 2022, 2021, 2015, 2014, 2013
 - ◊ Journal of Systems Research, 2021
 - ◊ Springer Real-Time Systems, 2021
 - ◊ ACM Transactions on Embedded Computing Systems, 2021, 2020
 - ◊ IEEE Transactions on Cognitive Communications and Networking, 2021, 2020
 - ◊ IEEE Internet of Things Journal, 2021, 2019
 - ◊ IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020
 - ◊ IEEE Transactions on Mobile Computing, 2020
 - ◊ IEEE Transactions on Communications, 2015, 2014, 2013
 - ◊ IEEE Transactions on Signal Processing, 2015, 2014, 2013
 - ◊ IEEE Communications Surveys and Tutorials, 2015, 2014, 2013
 - ◊ IEEE Wireless Communications Magazine, 2015, 2014, 2013
 - ◊ IEEE Transactions on Vehicular Technology, 2014, 2013
 - **Conferences**
 - ◊ Primary Reviewer
 - ◊ ACL Empirical Methods in Natural Language Processing (EMNLP), 2023
 - ◊ IEEE Conference on Decision and Control (CDC), 2022
 - ◊ IEEE Vehicular Technology Conference (VTC-Spring), 2022
 - ◊ IEEE Vehicular Networking Conference (VNC), 2020
 - ◊ IEEE Global Communications Conference (GLOBECOM), 2019

- ◇ AACC American Control Conference (ACC), 2019
- ◇ IEEE Vehicular Technology Conference (VTC-Fall), 2018
- ◇ IEEE International Conference on Communications (ICC), 2015
- ◇ IEEE Vehicular Technology Society Asia Pacific Wireless Communications Symposium (VTS-APWCS), 2014
- ◇ IEEE Conference on Local Computer Networks (LCN), 2014

Secondary Reviewer

- ◇ ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS), 2019, 2018
- ◇ IEEE Real-Time Systems Symposium (RTSS), 2018
- ◇ IEEE International Symposium on Real-Time Distributed Computing (ISORC), 2018
- ◇ IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), 2018, 2017

External Reviewer

- ◇ USENIX ATC, 2024

– **Book Proposals**

- ◇ John Wiley & Sons, 2021

✔ **University Service**

- Member, Faculty Search Committee (Cybersecurity) **Fall 2024 – Spring 2025**
School of EECS, Washington State University
- Member, Computer Science Curriculum Committee **Fall 2023 – Summer 2024**
School of EECS, Washington State University
- Member, Graduate Admission Committee **Fall 2022**
School of Computing, Wichita State University
- Member, Faculty Search Committee for SoC Assistant Educator/Teaching Professor **Fall 2022, Summer 2022**
School of Computing, Wichita State University
- Member, Search Committee for SoC Laboratory Coordinator **Summer 2022**
School of Computing, Wichita State University
- Member, Awards and Scholarship Committee **Fall 2021 – Fall 2022**
School of Computing, Wichita State University
- Member, Awards and Scholarship Committee **Spring 2021**
Electrical Engineering and Computer Science, Wichita State University
 - EECS Nominee Selection, College of Engineering Wallace Awards, 2021
 - EECS Nominee Selection, University Faculty Awards, 2021

✔ **Undergraduate Research & Outreach Activities**

- Judge, EECS Capstone Project Presentation **Fall 2023**
Washington State University
- Faculty Mentor **Fall 2023 – Present**
The Institute for African American Mentoring in Computing Sciences (IAAMCS)
- McNair Faculty Mentor **Spring 2023 – Present**
Washington State University
- Guest Lecture, Upward Bound Wichita Prep, Wichita State University **June 2022**
Two lectures and demonstrations for high-school students on building robots using Cubelets
- Instructor, Summer Camp, Collage of Engineering, Wichita State University **June 2022**
Conducted one-day summer camp (Building Robot for Fun & Profit) for high-school students
- Research Presentation (Oral) Judge, Undergraduate Research and Creative Activity Forum (URCAF) **April 2022**
Wichita State University

- Team Interview Judge, Shocker MINDSTORMS Challenge **March 2022**
College of Engineering, Wichita State University
 - Judge, Group Design Challenge, Wallace Invitational for Scholarships in Engineering (WISE) **November 2021**
College of Engineering, Wichita State University
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Invited Talks

- *Protecting Actuators in Real-Time Cyber-Physical Systems* **May 2024**
Northwest Virtual Institute for Cybersecurity Education and Research (CySER) Summer Workshop
Recording: <https://tinyurl.com/cyser-workshop-24>
 - *Exploring Platform Reboot as a Security Measure for Cyber-Physical Systems* **March 2022**
Northwest Virtual Institute for Cybersecurity Education and Research (CySER) Seminar [Virtual]
Recording: <https://tinyurl.com/cyser-seminar-sp-23>
 - *Security in Real-Time Cyber-Physical Systems* **August 2022**
EECS Seminar, Washington State University, Washington, USA [Virtual]
 - *Securing Cyber-Physical Systems by Platform Reboot* **November 2021**
Centers of Academic Excellence in Cybersecurity (CAE) Tech Talk [Virtual]
Recording: <https://tinyurl.com/caett-21>
 - *Security and Resiliency for Real-Time Cyber-Physical Systems* **April 2020**
Dept. of Electrical Eng. and Comp. Science Seminar, Wichita State University, Kansas, USA [Virtual]
 - *Attack-Resilient Platforms for Real-Time Systems* **February 2020**
Collins-UIUC Workshop, Collins Aerospace, Iowa, USA
 - *Integrating Security into Legacy Hard Real-Time Systems* **June 2017**
Community of Practice for Real-Time Systems Seminar, Rockwell Collins, Iowa, USA [Virtual]
 - *Exploring Opportunistic Execution for Integrating Security into Legacy Hard Real-Time Systems* **November 2016**
ITI Trust and Security Seminar, Information Trust Institute, University of Illinois at Urbana-Champaign
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Technical Society Memberships

- Association for Computing Machinery (ACM)
 - Institute of Electrical and Electronics Engineers (IEEE)
 - IEEE Computer Society
 - IEEE Communication Society
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References

Available upon request.