Fathi Amsaad, PhD, SMIEEE
Assistant Professor
Department of Computer Science and Engineering
Department of Biomedical, Industrial and Human
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Wright State University, Dayton, OH, 45435
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Research Interests

Hardware Security, Embedded System Security, Trusted and Assured Microelectronics, IoT Security, Trustworthy TinyML/Embedded AI, Machine Learning for Cybersecurity

Work Experience

- **Wright State University**   Dayton, OH
  Assistant Professor, Dept. of Computer Sci. and Eng.   *(2022 - Current)*

- **Eastern Michigan University**   Ypsilanti, MI
  Assistant Professor and Grad. Coordinator, School of Info. Security   *(2019 - 2022)*

- **University of Southern Mississippi**   Hattiesburg, MS
  Assistant Professor, School of Computing Sci. and Computer Eng.   *(2018 - 2019)*

- **University of South Florida**   Tampa, FL
  Visiting Instructor, Computer Sci. and Eng. Dept.   *(2016 - 2017)*

- **Bowling Green State University**   Bowling Green, OH
  Adjunct Instructor, Eng. Tech. Dept.   *(2014 - 2015)*

- **University of Toledo**   Toledo, OH
  Teaching and Research Assistant, Electrical Eng. and Computer Sci. Dept.   *(2012 - 2016)*

- **University of Benghazi**   Benghazi, Libya
  Teaching Assistant/Lab Manager, Computer Sci. Dept.   *(2002 - 2008)*

Education

- **University of Toledo**   Toledo, OH
  Doctor of Philosophy in Engineering (Computer Science and Engineering)   *(2012 - 2017)*
  - **- Dissertation Title:** "A Trusted and Efficient Security Approach for the Detection of Hardware Trojans and Authentication of FPGA-based Systems", *GPA: 3.95/4.00.*

- **University of Bridgeport**   Bridgeport, CT
  (Dual Master of Science (MS): MS in Computer Science / MS in Computer Eng.)   *(2010 - 2012)*

- **University of Benghazi**   Benghazi, Libya
  Bachelor of Science in Computer Science   *(1997) - (2002)*

Ph.D. Courses: University of Toledo (UT), Toledo, OH

- Hardware Security
- Digital/VLSI System Testing
- Software Specification and Design
- Biologically Inspired Computing
- Field Programmable Gate Arrays
- Advanced Computer Architecture
- Neural Networks: Theory and RF
- Graduate Research Seminar

Selected M.Sc. Courses: University of Bridgeport (UB), Bridgeport, CT

- Network Security
- Intro. to VLSI Design
- Wireless Communications
- Operating Systems
- Digital Signal Processing I
- Computer Communication I: System Analysis
- Object Oriented Programming w/C++
- Windows Programming
- Intro. to Computer Architecture
- Network Administration
- Artificial Intelligence
- Analysis of Algorithms
- Local Area Networks
- Computer Communication II: Networks
- Web-Based Application Development
- Database Design

Selected B.Sc. Courses: Computer Science, University of Benghazi, Libya

- Computer Security and Privacy
- Theory of Computer and Automata
- Data Structure
- Assembly Language Programming
- Numerical Methods
- Compiler Constructions
- Intro to Microprocessor
- HTML and Web Programming
- Computer Networks
- Structural Programming with Pascal
- Advanced Data Structure Programming
- Sequential Machine
- Introduction to C Programming
- Assembly Language Programming
- Digital Logic I
- Intro to Database Systems

Professional Development: Training and Certificates

- SANS Training Program: Advanced Penetration Testing, Exploit Writing, 2022
- S ANS Training Program: Advanced Penetration Testing, Exploit Writing, and Ethical Hacking Certification, 2022
- Certified in Computer Communication and Networking, University of Bridgeport, 2011
- Certified in Advanced Application and System Programming, University of Bridgeport, 2010
- Master and PhD Scholarship Award, Libyan government, 2008-2017
- Microsoft Certified Professional (MCP), Microsoft Certified System Administrator (MCSA)
- Microsoft CertifiedSystem Engineer (MCSE), and Certificated in Share and Office Point Microsoft Company, (ID # 6073918), 2007

Computer Skills

Xilinx ISE CAD tools; Xilinx Vivado Designer; Altera Quarters II Software; VHDL, System Verilog, and Verilog; Assembly Language Programming, Structural Programming, Cadence; Monographic; NI Multisim; MS Office; Windows Client/Windows Server; Mac, Unix, and Linux OS; MATLAB; SQL Server; Object Oriented Programming with C++, C#, and Java; Visual Basic script and java script; Python; Visual Basic; PHP; and ASP.net.

Industrial Experience

Network Administrator and System Security Engineer, *Benghazi, Libya, 2007-2008.*
  System administration, support, installation, configuration, upgrades, patches, performance tuning, backup and recovery, cloning; Space management; Oracle and MySQL databases security and auditing.

ABET and NSA Experience

- Contributing to ABET and NSA accreditations in Cybersecurity at EMU;
- Contributed to ABET for the ECET-2490: Digital Elec Comp. & Sys., 3 credits (Lecture + Lab), Spring 2015, Adjunct Instructor, BGSU;
- Contributed to ABET for the ENET-3050: Fundamental of Electricity, 4 credits (Lecture + Lab), Spring 2016, Lecturer, Utoledo;
- Contributed to ABET for the CDA 4203: Computer Systems Design, 3 credit hours (Lecture + Lab), Spring 2017, Visiting Instructor, USF.

Collaborative Federal and Industry Awarded Funding

Note: The following is the list of external funding Dr. Amsaad received or managed during his time at Wright State University (2022-2024).

1. **Title: Assured Digital Microelectronics Education & Training Ecosystem (ADMETE)**
   - **My Role:** Lead PI since Fall 2022 (Executing and Managing the Grant)
   - **Award Type:** Federal Cooperative Agreement
   - **Awarding Agency:** Air Force Research Lab (AFRL)
   - **Status:** Funded
   - **Award Amount Including All Partners:** $29.75M
   - **Funding Received:** $14.5M
   - **Fund Allocated for Wright State only:** $6.9M
   - **Partner Institutions:** University of Dayton (UD), University of Akron (UA), Youngstown State University (YSU), Ohio University (OU), University of Toledo (UT), and Lorain County Community College (LCCC)
   - **Date:** 09/2020 – 12/2024
   - **(Link:)** https://webapp2.wright.edu/web1/newsroom/2023/01/12/digital-microelectronics-lab-provides-wright-state-students-with-cybersecurity-training-space/

2. **Title: National Pathway to Success (NPS) Cybersecurity Program**
   - **My Role:** Lead PI
   - **Award Type:** Standard Collaborative Educational Grant
   - **Sponsor:** National Centers of Academic Excellence in Cybersecurity (NCAE-C)
   - **Awarding Agency:** National Security Agency (NSA)
   - **Status:** Funded
   - **Award Amount Including All Partners:** $704K
   - **Funding Received:** $704K
   - **Fund Allocated for Wright State only:** $520K
   - **Partner Institutions:** Kansas University (KU), Eastern Michigan University (EMU), Sacred Heart University (SHU), Florida International University (FIU), University of Texas El Paso (UTEP), and Sinclair Community College (SCC)
   - **Date:** 06/2023 – 06/2025 (potential extension for third year with $332K, Totaling it to $1.36M)
   - **(Link:)** https://bit.ly/4evCIfK

3. **Title: Collaborative Research: REU Site: TRUST: Training Research for Undergraduate Students in Secure and Trusted Systems**
   - **My Role:** Lead PI
   - **Award Type:** Standard Collaborative Research Grant
   - **Partner Institutions:** Air Force Institute of Technology (AFIT) and University of Kansas (KU)
   - **Awarding Agencies:** Cofounded by National Science Foundation (NSF) and Department of Defense (DOD/AFOSR STEM ASSURE Program)
   - **Status:** Funded
   - **Award Amount Including All Partners:** $367K
   - **Fund Allocated for Wright State only:** $166K
   - **Date:** 01/2025 – 12/2027
   - **(Link:)** https://shorturl.at/b8Fo7

4. **Title: Runtime Hardware Trojan Resilience Monitoring**
   - **My Role:** WSU PI
   - **Co-PI:** Prof. Saiyu Ren, Professor of Electrical Engineering, Wright State University
   - **Lead PI:** Prof. John Emmert, University of Cincinnati (UC)
   - **Award Type:** Subcontract
   - **Sponsor:** NSF Center for Hardware and Embedded System Security and Trust at the University of Cincinnati (UC)
   - **Sponsor Agency:** National Science Foundation (NSF)
   - **Status:** Funded
   - **Award Amount:** $100K
   - **Funding Received:** $100K
   - **Date:** 09/2023 – 12/2024
   - **(Link:)** https://iucrc.nsf.gov/centers/center-for-hardware-and-embedded-system-security-and-trust/

5. **Title: Semiconductor Education Program at Central State University (ISEP-CSU)**
   - **My Role:** Co-PI in 2023 and PI starting in 2024
   - **Project Lead:** Prof. Subhashini Ganapathy, Dean of Graduate Programs & Honors Studies, Wright State University
   - **Award Type:** Subcontract
   - **Sponsor:** Central State University (CSU)
   - **Primary Sponsor:** Intel Corporation
   - **Status:** Funded
   - **Award Amount Including All Partners:** $1.2M
   - **Fund Allocated for Wright State only:** $40K first year (Y1) and $130K second year (Y2)
   - **Date:** 01/2023 – 01/2026
   - **(Links:)**
     - https://www.centralstate.edu/semiconductors/Intel
     - https://webapp2.wright.edu/web1/newsroom/2022/09/09/grants-from-intel-corporation-will-support-curriculum-development-and-training-for-local-students/
     - https://www.dispatch.com/story/news/education/2022/09/09/intel-invests-17-7-million-for-ohio-semiconductor-research-education/66804476007/

6. **Title: The Ohio-southwest Alliance on Semiconductors and Integrated Scalable Manufacturing (OASiS)**
   - **My Role:** Co-PI
   - **Project Lead:** Prof. Subhashini Ganapathy, Dean of Graduate Programs & Honors Studies, Wright State University
   - **Award Type:** Subcontract
   - **Sponsor:** Central State University (CSU)
   - **Primary Sponsor:** Intel Corporation
   - **Status:** Funded
   - **Award Amount Including All Partners:** $3M; for three years
   - **Fund Allocated for Wright State only:** $220K
   - **My Share:** $12K (Y1), $12K (Y2) to support a graduate student
   - **(Link:)** https://webapp2.wright.edu/web1/newsroom/2022/09/09/grants-from-intel-corporation-will-support-curriculum-development-and-training-for-local-students/

7. **Title: ML-assisted Approach for Human Machine Teaming in Multi-Agent Reinforcement**
   - **My Role:** PI
   - **Award Type:** Student-Faculty Research Fellowship Award
   - **Sponsor:** Strategic Ohio Council for Higher Education (SOCHE) within Ohio Department of Higher Education (ODOH)
   - **Co-Sponsor/Administrator:** Air Force Research Lab (AFRL)
   - **Date:** 08/28/2023 – 08/27/2025
   - **Total Cost:** $88,260 for two years to support the project.
   - **(Link:)** https://www.soche.org/college-students/dagsi-fellowship-awards-2023/

8. **Title: AI-Enhanced Approach for Improved Human Decision-Making using Feature Fusion in Space Data**
   - **My Role:** PI
   - **Award Type:** Student-Faculty Research Fellowship Award
   - **Sponsor:** Strategic Ohio Council for Higher Education (SOCHE) within Department of Higher Education (ODOH)
   - **Co-Sponsor/Administrator:** Air Force Research Lab (AFRL)
   - **Start Date:** 08/28/2024
   - **End Date:** 08/27/2026 (Potential of two more years extension to support the PhD student)
   - **Total Cost:** $50K for first year to support the project.
   - **Note:** Potential extensions: expected three funds with extra $50K fund for every year, making the total expected funding $150K
   - **(Link:)** https://www.soche.org/college-students/dagsi-fellowship-awards-2024/

9. **Title: Time: Trustworthy AI in Machine Learning Environment**
   - **My Role:** PI
   - **Award Type:** Subcontract
   - **Sponsor:** InfoSciTex Company (IST)
   - **Primary Sponsor:** AFRL/AFOSR
   - **Amount:** $80K
   - **Project Period:** 1 year (potential of more funding for more years)
   - **Start Date:** 05/2024
   - **End Date:** 05/2025

10. **Title: Development of CyberTraining Program in AI Microelectronics Security**
    - **My Role:** PI
    - **Award Type:** Subaward
    - **Sponsor:** Purdue Northwest University (PNU) - Center for Cybersecurity
    - **Primary Sponsor:** National Security Agency (NSA)
    - **Lead PI:** Prof. Michael Tu, Director, The Center for Cybersecurity, PNU
    - **Expected Start Date:** 08/2024
    - **Expected End Date:** 06/2025
    - **Amount:** $25K

Internal and Research Award Funding

1. **Title: AI-assisted Approach for the Detection of IC Hardware Trojan**
   - **My Role:** PI
   - **Award Type:** Fellowship Research Award
   - **Award Description:** 2023 U.S. Department of the Air Force Summer Faculty Fellowship Program (2023 SFFP Awardees)
   - **Sponsor:** Air Force Office of Scientific Research (AFOSR)
   - **Status:** Funded
   - **Award Amount:** $13K
   - **Date:** 2023
   - **Link:** https://bit.ly/3RAM3cv

2. **Title: Securing Current and Next-Generation Smart Power Grid Infrastructure against Hardware-based Remote Access Trojans (RATs)**
   - **My Role:** PI
   - **Award Type:** 2022 Summer Research Awards
   - **Awarding Institution:** Eastern Michigan University
   - **Status:** Funded
   - **Award Amount:** $12K
   - **Date:** Summer 2022
   - **Link:** https://bit.ly/45vu4tO

3. **Title: A Novel Security Approach for the Detection of the Embedded Hardware Trojans**
   - **Award Type:** 2020 Faculty Research Fellowship (FRF)
   - **Description:** 2021-22 Faculty Research and Creative Activity Fellowships
   - **Awarding Institution:** Eastern Michigan University
   - **Status:** Funded
   - **Benefit:** 4 Course Releases (approximately equivalent to $32K)
   - **Date:** Jan. 2021
   - **Link:** https://bit.ly/4ev2p04

4. **Title: A Trusted Unmanned Aircraft System (UAS) with Built-in Hardware Oriented Security**
   - **Award Type:** 2020 CoRE Program
   - **Description:** Culture of Research Excellence (CoRE) Grant Writing Program
   - **Awarding Institution:** Eastern Michigan University
   - **Status:** Funded
   - **Benefit:** 2 Course Releases (approximately equivalent to $15K)
   - **Date:** 2019-2020
   - **Links:** https://www.emich.edu/research/development/core.php

5. **Title: Strengthening Autonomous Vehicles Cybersecurity with Hardware-Based Biometrics**
    - **Award Type:** Faculty First Research Award
    - **Awarding Organization:** GameAbove organization as part of $2 Million Award
    - **Awarding Institution:** Eastern Michigan University
    - **Status:** Funded
    - **Total Award:** $50,112
    - **My share:** $5K
    - **Date:** April 2020
    - <u>**Links:**</u>
        - https://today.emich.edu/story/story/11375
        - https://bit.ly/3xtcpX5

Peer Reviewed Research Publications

A. Archived Papers Published in Peer Reviewed Journal and Magazine Articles

<u>***Note:***</u> The following papers were published in peer-reviewed journals or magazines during the time Dr. Amsaad served as an Assistant Professor (between 2018 and 2024), after completing his PhD. Dr. Amsaad's name is underscored and highlighted **<u>Bold and underlined</u>**. His graduate student mentees and visiting scholars who worked in his lab are highlighted in <u>*italic and underlined*</u>. IF = Impact Factor.

Paper Publications: Peer Reviewed Journal and Magazine (J&R) Published Papers

I. Publications Appeared in 2024:

1. <u>*Niraj Prasad Bhatta*</u>, <u>*Harshdeep Singh*</u>, Md Tauhidur Rahman, and **<u>F. Amsaad</u>**, "Analyzing Aging Effects on SRAM PUFs: Implications for Security and Reliability," *Journal of Hardware and System Security (HaSS): Special Issue in Trustworthy Microelectronics*, 2024.
   [Peer Reviewed Journal Article, IF = 1.143, Publisher: Springier].
   (Link:) https://link.springer.com/article/10.1007/s41635-024-00154-6

2. <u>*Ashutosh Ghimire*</u> and **<u>F. Amsaad</u>**, "A Parallel Approach to Enhance the Performance of Supervised Machine Learning Realized on Multicore Environment," *in Machine Learning and Knowledge Extraction (MAKE)*, 2024.
   [Peer Reviewed Journal Article, IF = 4.0, Publisher: MDPI, (SJR Quartile = Q2 Journal)].
   (Link:) https://www.mdpi.com/2504-4990/6/3/90

3. <u>*V. Vardhan Baligodugula*</u>, <u>*A. Ghimire*</u>, and **<u>F. Amsaad</u>**, "An Overview of Secure Network Segmentation in Connected IIoT Environments," in *Computing and AI Connect*, 2024.
   [Peer Reviewed Journal, Publisher: Scifiniti].
   (Link:) https://www.scifiniti.com/3006-4163/1/2024.0004

II. Publications Appeared in 2023:

1. <u>*Brian Hildebrand*</u>, Mohamed Baza, Tara Salman, <u>*Simra Tabassum*</u>, <u>*Bharath Konatham*</u>, **<u>F. Amsaad</u>**, Abdul Razaque, "A comprehensive review on blockchains for Internet of Vehicles: Challenges and directions," in *Computer Science Review (Elsevier)*, 2023.
   [Peer Reviewed Journal Article, IF = 12.9, Publisher: Elsevier, SJR Quartile: Q1 Journal].
   (Link:) https://www.sciencedirect.com/science/article/abs/pii/S157401372300014X

2. <u>*B. Hildebrand*</u>, <u>*A. Ghimire*</u>, **F. Amsaad**, A. Razaque and S. P. Mohanty, "Quantum communication networks: design, reliability, and security," *in IEEE Potentials.* [Peer Reviewed IEEE Magazine Article, Cite Score = 1.4]
   (Link:) https://ieeexplore-ieee-org.ezproxy.libraries.wright.edu/document/10288526

3. S. Al-Eidi, **F. Amsaad**, O. Darwish, Y. Tashtoush, A. Alqahtani and <u>*Niveshitha Niveshitha*</u>, "Comparative Analysis Study for Air Quality Prediction in Smart Cities Using Regression Techniques," in *IEEE Access*, vol. 11, pp. 115140-115149, 2023. [Peer Reviewed Journal Article, Q1 IEEE Journal, IF = 3.9].
   (Link:) https://ieeexplore.ieee.org/document/10274948

   Note: *This paper was a collaborative effort in which I served as the second author, working closely with the first author, Dr. Al-Eidi, and one of my master's students, Niveshitha Niveshitha. I estimate that my student and I contributed at least 50% of the work, including implementation, enhancing the paper's ideas, and improving readability, writing, and presentation. This collaboration was highly educational for the student, who later expanded the idea into her Master's thesis entitled **"Efficient Cloud-based ML Approach for Safe Smart Cities"**.*

4. Abdul Razaque, Mohamed Ben Haj Frej, Gulnara Bektemyssova, **F. Amsaad**, Muder Almiani, Aziz Alotaibi, NZ Jhanjhi, Saule Amanzholova, Majid Alshammari, "Credit Card-Not-Present Fraud Detection and Prevention Using Big Data Analytics Algorithms," *Applied Sciences*, 2023. [Peer Reviewed Journal Article, Publisher: MDPI, JCR - Q1 (Engineering, Multidisciplinary), IF= 2.5].
   (Link:) https://www.mdpi.com/2076-3417/13/1/57

III. Publications Appeared in 2022:

1. Abdul Razaque, **F. Amsaad**, <u>*Musbah Abdulgader*</u>, Bandar Alotaibi, Fawaz Alsolami, Duisen Gulsezim, and Saraju P. Mohanty, "A Mobility-Aware Human-Centric Cyber-Physical System for Efficient and Secure Smart Healthcare," in *IEEE Internet of Things Journal*, vol. 9, no. 22, pp. 22434-22452, Nov. 15, 2022. [Peer Reviewed Journal Article, Q1 IEEE Journal, five years IF = 11.043].
   (Link:) https://ieeexplore.ieee.org/document/9669196

   Note: *This paper was a collaborative effort in which I served as the second author, working closely with the first author, Dr. Abdul Razaque, and one of my visitor scholars during my time at Eastern Michigan University, Dr. Musbah Abdulgader (I served as his main faculty mentor). Dr. Abdulgader secured an assistant professor job after that. I also estimate that my my visitor scholars and I contributed at least 50% of the work, including implementation, enhancing the paper's ideas, and improving readability, writing, and presentation. This collaboration was highly educational, and we used it to submit a couple of NSF grants for Cybersecurity Training, REU, IUSE, and SaTC.*

2. Abdul Razaque, Yaser Jararweh, Aziz Alotaibi, **F. Amsaad**, Bandar Alotaibi, Munif Alotaibi, "A blockchain-enabled framework for securing connected consumer electronics against wireless attacks," *Journal of Simulation Modelling Practice and Theory (Elsevier)*, 2022. [Peer Reviewed Journal Article, Q1 Elsevier Journal, IF = 4.199]. **(Link:)** https://www.sciencedirect.com/science/article/abs/pii/S1569190X22001228

3. Abdul Razaque, Bandar Alotaibi, Munif Alotaibi, **F. Amsaad**, Ansagan Manasov, Salim Hariri, Banu B. Yergaliyeva, and Aziz Alotaibi, "A blockchain-Enabled Deep Recurrent Neural Network Model for Clickbait Detection: Implications for Online Content Credibility," in *IEEE Access*, vol. 10, pp. 3144-3163, 2022. [Peer Reviewed Journal Article, Q1 IEEE Journal, IF = 3.9].
   (Link:) https://ieeexplore.ieee.org/document/9656746

4. K. Sahoo Malik, N. Z. Jhanjhi, S. Bhatia, and **F. Amsaad**, "E-Learning Course Recommender System Using Collaborative Filtering Models," *Electronics*, 2022. [Peer Reviewed Journal Article, Q2 Journal, IF=2.6].
   (Link): https://www.mdpi.com/2079-9292/12/1/157

5. V. Kumar, N. Malik, J. Singla, N. Z. Jhanjhi, **F. Amsaad**, and Abdul Razaque, "Light Weight Authentication Scheme for Smart Home IoT Devices," *Cryptography*, 2022. [Peer Reviewed Journal Article, Publisher: MDPI, Journal Rank: JCR = Q2 Journal), IF = 1.8]. **(Link:)** https://www.mdpi.com/2410-387X/6/3/37

6. Mamoona Humayun, Noor Zaman Jhanjhi, Mahmood Niazi, **F. Amsaad**, and Isma Masood, "Securing Drug Distribution Systems from Tampering Using Blockchain," *Electronics*, 2022. [Peer Reviewed Journal Article, Q2 Journal, IF = 2.69]. **(Link:)** https://www.mdpi.com/2079-9292/11/8/1195

IV. Publications Appeared in 2021:

1. **F. Amsaad**, Ahmed Oun, Mohammed Y. Niamat, Abdul Razaque, Selcuk Kose, Mohamed Mahmoud, and Waleed Alasmary, "Enhancing the Performance of Lightweight Configurable PUF for Robust IoT Hardware-Assisted Security," in *IEEE Access*, vol. 9, pp. 136792-136810, 2021. [Peer Reviewed Journal Article, Q1 IEEE Journal, IF = 3.9].
   (Link:) https://ieeexplore.ieee.org/document/9557269

2. **F. Amsaad** and S. Köse, "A Secure Lightweight Hardware-assisted Charging Coordination Authentication Framework for Trusted Smart Grid Energy Storage Units," *Springer Nature Computer Science*, 2021. [Peer Reviewed Journal Article, Q1 Springer Journal, IF = 1.9].
   (Link:) https://link.springer.com/article/10.1007/s42979-021-00840-0

3. **F. Amsaad** and S. K¨ose, "A Secure Hardware-Assisted AMI Authentication Scheme for Smart Cities," *in IEEE Consumer Electronics Magazine*, vol. 10, no. 4, pp. 106-112, 1 July 2021. [Peer Reviewed Journal Article, Q1 IEEE Magazine, IF = 4.5]. **(Link:)** https://ieeexplore.ieee.org/document/9271856

V. Publications Appeared in 2020:

1. A. A. Shafee, M. M. Fouda, M. M. E. A. Mahmoud, A. J. Aljohani, W. Alasmary, and **F. Amsaad**, "Detection of Lying Electrical Vehicles in Charging Coordination Using Deep Learning," in *IEEE Access*, vol. 8, pp. 179400-179414, 2020. [Peer Reviewed Journal Article, Q1 IEEE Journal, IF = 3.9].
   (Link:) https://ieeexplore.ieee.org/abstract/document/9210521

2. A. Razaque, **F. Amsaad**, S. Hariri, M. Almasri, S. S. Rizvi and M. B. H. Frej, "Enhanced Grey Risk Assessment Model for Support of Cloud Service Provider," in *Peer Reviewed Journal Article, IEEE Access*, vol. 8, pp. 80812-80826, 2020. [Q1 IEEE Journal, IF = 3.9].
   (Link:) https://ieeexplore.ieee.org/abstract/document/9064787

VI. Publications Appeared in 2019:

1. Abdul Razaque, **F. Amsaad**, Meer Jaro Khan, Salim Hariri, Shujing Chen, Chen Siting, "Survey: Cybersecurity Vulnerabilities, Attacks and Solutions in the Medical Domain," in *IEEE Access*, vol. 7, pp. 168774-168797, 2019. [Peer Reviewed Journal Article, Q1 IEEE Journal, IF = 3.9].
   (Link:) https://ieeexplore.ieee.org/document/8888271

VII. Publications Appeared in 2018:

1. **F. Amsaad**, M. Niamat, A. Dawoud, and S. Köse, "Reliable Delay based Algorithm to Boost PUF Security against Modeling Attacks," *Information*, Vol. 9, No. 9, pp. 1–15, September 2018. [Peer Reviewed Journal Article, Q2 Journal, IF =2.4]. **(Link:)** https://www.mdpi.com/2078-2489/9/9/224

2. *M. Azhar*, **F. Amsaad**, and S. Köse, "Duty Cycle-based Controlled Physical Unclonable Function," *IEEE Transactions on Very Large-Scale Integration (VLSI) Systems*, Vol. 26, No. 9, pp. 1647–1658, September 2018. [Peer Reviewed Journal Article, Q2 IEEE Journal, IF = 2.8]. **(Link):** https://ieeexplore.ieee.org/document/8365151

   Note: *"This paper was a collaborative effort in which I served as the second author, working closely with the first author, M. Azhar, and his advisor, Dr. S. Kose. Although I was not the main advisor, I served as a PhD committee member for M. Azhar at that time. I estimate my contribution to be at least 50% of the work, including assistance in supervising the student, implementing the PUF design, enhancing the research ideas, and improving the readability, writing, and presentation, as this paper is my area of research."*

B. Under Review and Pre-print/IEEE TechRxiv Journals

Note: The following papers are still under peer review process. Some of the work has been published in pre-print or archived in IEEE TechRxiv journals. Dr. Amsaad's name is highlighted in **bold**. His graduate student mentees are highlighted in *italic and underlined*. These documents are submitted in 2024.

1. *Harshdeep Singh*, *Ashutosh Ghimire*, Saraju Mohanty, Md Tauhidur Rahman, and **Fathi Amsaad**, "AI-Driven SRAM PUF Manufacturer Identification for Trusted IC Supply Chain Systems," *IEEE Transactions on Very Large Scale Integration (TVLSI) Systems*, 2024. [**Peer Reviewed IEEE Journal, IF = 2.8, Publisher: IEEE**].
   (Link:) https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=92

2. *Bharath Konatham*, *Tabassum Simra*, and **F. Amsaad**, Mohamed I. Ibrahem, and Noor Zaman, "A Secure Hybrid Deep Learning Technique for Anomaly Detection in IIoT Edge Computing," *IEEE Transactions on Industrial Electronics (TIE)*. [**Peer Reviewed Journal, IF = 7.7, Publisher: IEEE**].
   (Link:) https://shorturl.at/NX3KA

3. *Ashutosh Ghimire*, *Mohammed Alkurdi*, Md Tauhidur Rahman, Saraju Mohanty, and **Fathi Amsaad**, "A Golden-Free Unsupervised ML-Assisted Security Approach for Detection of IC Hardware Trojans," *ACM Journal on Emerging Technologies in Computing Systems (JETC)*, 2024. [**Peer Reviewed Journal, IF = 2.1, Publisher: ACM**].
   (Link:) https://dl.acm.org/journal/jetc

4. *Ashutosh Ghimire*, *Mohammed Alkurdi*, Saraju Mohanty, and **Fathi Amsaad**, "AI-Enabled Image Processing Approach for Efficient Clustering and Identification of Hardware Trojans," *Integration*, 2024. [**Peer Reviewed Elsevier VLSI Journal, IF = 2.2, Publisher: Elsevier**].
   (Link:) https://www.sciencedirect.com/journal/integration

5. *Niraj Prasad Bhatta*, and **Fathi Amsaad**, "ML Assisted Techniques in Power Side Channel Analysis for Trojan Classification," *Cluster Computing*, 2024. [**Peer Reviewed, Q1 Journal, IF = 3.6, Publisher: Springer**].
   (Link:) https://link.springer.com/journal/10586

6. <u>*Tabassum Simra*</u>, <u>*Bharath Konatham*</u>, Mohamed Ibrahem, Yaser Jararweh, and **Fathi Amsaad**, "A Knowledge-Based Federated Deep Learning Approach for Secure Edge Computing," *Progress in Artificial Intelligence*, 2024.
   [Peer Reviewed Journal, IF = 2.0, Publisher: Springer].
   (Link:) https://link.springer.com/journal/13748

7. <u>*Harshdeep Singh*</u>, <u>*Niraj Prasad Bhatta*</u>, Md Tauhidur Rahman, and **Fathi Amsaad**, "A Accelerated Aging Effects on SRAM PUF reliability at various Temperature and Voltage conditions," *Emerging Trends in Sensors, IoT and Smart Systems: SN SN Computer Science*, 2024.
   [Peer Reviewed Q1 Journal, IF = 1.9, Publisher: Springer].
   (Link:) ://link.springer.com/journal/42979

8. <u>*Khaled Saleh*</u>, **F. Amsaad**, Dirar Darwesh, Omar Darwish, "Software and Hardware based Obfuscation and De-obfuscation Techniques for Secure and Trusted System: A Comprehensive Study," *Computer Science Review (Elsevier)*. **[Peer Reviewed Elsevier Journal, IF = 12.9, Publisher: Elsevier]**.

9. <u>*Niveshitha Niveshitha*</u>, Ahmed Sherif, Noor Zaman Jhanjhi, and **F. Amsaad**, "AI-assisted Distributed Cloud Services Framework for Enhanced Safety in Urban Smart Cities Environment," https://shorturl.at/sJX6R, 2024. (www.techrxiv.org)

D. Published Books and Book Chapters

<u>**Note:**</u> The following are published work on Books and Book Chapters. Dr. Amsaad's name is highlighted in **bold**. His graduate student mentees are highlighted in <u>*italic and underlined*</u>.

- **Book1: Advances in Intelligent Systems and Computing**
  Book Editors: Sheng-Lung Peng, Noor Zaman Jhanjhi, Souvik Pal, and **F. Amsaad**
  Publisher: *Springer Nature*: The 3rd International Conference on Mathematical Modeling and Computational Science (ICMMCS 2023)
  Publication Date: 2023
  (Link:) https://link.springer.com/book/10.1007/978-981-99-3611-3

- **Book2: Cryptographic Methods**
  Book Editors: Abdul Razaque, **F. Amsaad**, and Abrar Alajlan
  Publisher: *WestBow Press*
  Publication Date: 2021
  Issue: ISBN-13: 978-1973694090
  (Link:) https://www.westbowpress.com/en/bookstore/bookdetails/805984-cryptographic-methods

- **Book Chapter1: F. Amsaad**, <u>*Brian Hildebrand*</u>, Mohamed Baza, Abdul Razaque, "Secure Blind Signature for Electronic Voting and Electronic Cashing Systems: A Survey," Security and Resilience of Cyber Physical Systems, eBook ISBN (9781003185543), *Imprint Chapman and Hall/CRC*, 2022.
  (Link:) https://bit.ly/3VKEOkO

E. Published Conference Papers

<u>**Note:**</u> The following Peer reviewed Conference Papers are published by IEEE. Dr. Amsaad's name is highlighted in **bold**. His graduate student mentees are highlighted in <u>*italic and underlined*</u>.

<u>**Note:**</u> **Link to All Conference Papers in IEEE Xplore Database:** (https://shorturl.at/TM4Q3)

1. *Niraj Parsad Bhatta*, *Sufian Al Majmaie*, and **F. Amsaad** "Feature Analysis and Model Evaluation for Classification of Hardware Trojans," *2024 IEEE Physical Assurance and Inspection of Electronics (PAINE)*, Huntsville, AL, USA, November 12 – 14, 2024. (accepted 8/25/2024)

2. *Mani Rupak Gurram*, *Mithun Kumar Pk*, and **F. Amsaad** "Isolation Forest Based TinyML for Detecting Hardware Trojans on FPGA in Real Time," *2024 IEEE Physical Assurance and Inspection of Electronics (PAINE)*, Huntsville, AL, USA, November 12 – 14, 2024. (accepted 8/25/2024)

3. *Ashutosh Ghimire*, *Mohammed Alkurdi*, *Karma Gurung*, and **F. Amsaad** " Adversarial Attack Against Golden Reference-Free Hardware Trojan Detection Approach," *2024 IEEE Physical Assurance and Inspection of Electronics (PAINE)*, Huntsville, AL, USA, November 12 – 14, 2024. (accepted 8/25/2024)

4. *Niraj Parsad Bhatta*, Usha Gir, and **F. Amsaad** "Machine Learning-Based Classification of Hardware Trojans Using Power Side-Channel Signals," *2024 IEEE 67th International Midwest Symposium on Circuits and Systems (MWSCAS)*, Springfield, MA, US, 11 August 2024 – 14 August 2024. (presented and in press for publication)

5. *T. Simra*, *B. Konatham*, **F. Amsaad**, M. I. Ibrahem, and N. Z. Jhanjhi, "Enhancing Anomaly Detection of IoT using Knowledge-Based and Federated Deep Learning," *2024 IEEE 3rd International Conference on Computing and Machine Intelligence (ICMI)*, Mt Pleasant, MI, USA, 2024, pp. 1-6, doi: 10.1109/ICMI60790.2024.10585693.

6. *V. V. Baligodugula* and **F. Amsaad**, "Enhancing the Performance of Unsupervised Machine Learning Using Parallel Computing: A Comparative Analysis," *2024 IEEE 3rd International Conference on Computing and Machine Intelligence (ICMI)*, Mt Pleasant, MI, USA, 2024, pp. 1-5, doi: 10.1109/ICMI60790.2024.10585759.

7. *M. Kumar PK*, *A. A. Hossain*, *S. A. Majmaie*, and **F. Amsaad**, "Routing Protocol Attack Detection Using Machine Learning Through Parallel Computing in Wireless Sensor Network," *2024 IEEE 3rd International Conference on Computing and Machine Intelligence (ICMI)*, Mt Pleasant, MI, USA, 2024, pp. 1-5, doi: 10.1109/ICMI60790.2024.10586175.

8. Ahmed T. El-Toukhy, Islam Elgarhy, Mahmoud M. Badr, Mohamed Mahmoud,Mostafa M. Fouda, Mohamed I. Ibrahem, **F. Amsaad**, "Securing Smart Grids: Deep Reinforcement Learning Approach for Detecting Cyber-Attacks," *2024 International Conference on Smart Applications, Communications and Networking (SmartNets)*, Harrisonburg, VA, USA, 2024, pp. 1-6, doi: 10.1109/SmartNets61466.2024.10577711.

9. *A. Ghimire*, *M. Alkurdi*, and **F. Amsaad**, "Enhancing Hardware Trojan Security through Reference-Free Clustering using Representatives," *2024 37th International Conference on VLSI Design* and *2024 23rd International Conference on Embedded Systems (VLSID)*, Kolkata, India, 2024, pp. 467-473, doi: 10.1109/VLSID60093.2024.00084.

10. *V. V. Baligodugula*, **F. Amsaad**, and N. Jhanjhi, "Analyzing the Parallel Computing Performance of Unsupervised Machine Learning," *2024 IEEE 1st Karachi Section Humanitarian Technology Conference (KHI-HTC)*, Tandojam, Pakistan, 2024, pp. 1-6, doi: 10.1109/KHI-HTC60760.2024.10482277.

11. *S. M. T. Nowroz*, **F. Amsaad**, and N. Jhanjhi, "Dielectric Characterization for Secure and Reliable High-Frequency Printed Circuit Board Applications," *2024 IEEE 1st Karachi Section Humanitarian Technology Conference (KHI-HTC)*, Tandojam, Pakistan, 2024, pp. 1-5, doi: 10.1109/KHI-HTC60760.2024.10482244.

12. *N. P. Bhatta*, *S. A. Majmaie*, **F. Amsaad**, N. Jhanjhi, and T. R. Soomro, "SRAM PUFs: A Study of Aging Impact and Potential Mitigation," *2024 IEEE 1st Karachi Section Humanitarian Technology Conference (KHI-HTC)*, Tandojam, Pakistan, 2024, pp. 1-5, doi: 10.1109/KHI-HTC60760.2024.10482239.

13. **F. Amsaad**, *S. Al-Eidi*, and O. Darwish, "Comparative Analysis of Sequential and Parallel Computing for Object Detection Using Deep Learning Model," *2023 24th International Arab Conference on Information Technology (ACIT)*, Ajman, United Arab Emirates, 2023, pp. 1-5, doi: 10.1109/ACIT58888.2023.10453894.

14. *N. P. Bhatta*, *H. Singh*, and **F. Amsaad**, "Benchmarking for Hardware Security: Types, Design Levels,

and Limitations," *2023 IEEE 66th International Midwest Symposium on Circuits and Systems (MWSCAS)*, Tempe, AZ, USA, 2023, pp. 1088-1092, doi: 10.1109/MWSCAS57524.2023.10405976.

15. A. Ghimire, **F. Amsaad**, T. Hoque, K. Hopkinson, and M. T. Rahman, "Unsupervised IC Security with Machine Learning for Trojan Detection," *2023 IEEE 66th International Midwest Symposium on Circuits and Systems (MWSCAS)*, Tempe, AZ, USA, 2023, pp. 20-24, doi: 10.1109/MWSCAS57524.2023.10406045.

16. N. Niveshitha, **F. Amsaad**, and N. Z. Jhanjhi, "Air Quality Prediction in Smart Cities Using Cloud Machine Learning," *2023 Second International Conference On Smart Technologies For Smart Nation (SmartTechCon)*, Singapore, Singapore, 2023, pp. 1115-1119, doi: 10.1109/SmartTechCon57526.2023.10391685.

17. B. R. Konatham, T. Simra, A. Ghimire, **F. Amsaad**, M. I. Ibrahem, and N. Z. Jhanjhi, "ML-assisted Security for Anomaly Detection in Industrial IoT (IIoT) Applications," *2023 Second International Conference On Smart Technologies For Smart Nation (SmartTechCon)*, Singapore, Singapore, 2023, pp. 1120-1127, doi: 10.1109/SmartTechCon57526.2023.10391331.

18. N. P. Bhatta, **F. Amsaad**, H. Singh, A. Sherif, and K. Hopkinson, "Enhancing Hardware Security: An Analysis of SRAM-PUFs," *NAECON 2023 - IEEE National Aerospace and Electronics Conference*, Dayton, OH, USA, 2023, pp. 174-180, doi: 10.1109/NAECON58068.2023.10365899.

19. A. Ghimire, **F. Amsaad**, T. Hossain, T. Hoque, and A. Sherif, "FPGA Hardware Trojan Detection: Golden-Free Machine Learning Approach," *NAECON 2023 - IEEE National Aerospace and Electronics Conference*, Dayton, OH, USA, 2023, pp. 181-186, doi: 10.1109/NAECON58068.2023.10365812.

20. H. Singh, N. P. Bhatta, K. M. T. Jawad, H. Singh, **F. Amsaad**, and K. Hopkinson, "ML-Assisted Security for the Detection of DDoS Attacks in Connected IIoT Environment: Implementation and Comparative Analysis," *NAECON 2023 - IEEE National Aerospace and Electronics Conference*, Dayton, OH, USA, 2023, pp. 59-66, doi: 10.1109/NAECON58068.

21. H. Singh, N. P. Bhatta, K. M. Tawsik Jawad, A. Ghimire, M. T. Rahman, and **F. Amsaad**, "Evaluating the Robustness of SRAM Physical Unclonable Functions: Empirical Investigations," *2023 IEEE Physical Assurance and Inspection of Electronics (PAINE)*, Huntsville, AL, USA, 2023, pp. 1-7, doi: 10.1109/PAINE58317.2023.10317983.

22. N. P. Bhatta, H. Singh, A. Ghimire, M. T. Rahman, and **F. Amsaad**, "Aging of SRAM PUFs: Mitigation and Advancements Through Machine Learning Techniques," *2023 IEEE Physical Assurance and Inspection of Electronics (PAINE)*, Huntsville, AL, USA, 2023, pp. 1-6, doi: 10.1109/PAINE58317.2023.10318013.

23. A. Ghimire, H. Singh, N. P. Bhatta, and **F. Amsaad**, "Potential of Unsupervised Deep Learning for Detection of EM Side-Channel Attacks," *2023 IEEE Physical Assurance and Inspection of Electronics (PAINE)*, Huntsville, AL, USA, 2023, pp. 1-6, doi: 10.1109/PAINE58317.2023.10317979.

24. A. Ghimire, A. A. Hossain, N. P. Bhatta, and **F. Amsaad**, "Identification and Localization of Quantum Electromagnetic Fields of Hardware Trojan Attacks Using QDM-Based Unsupervised Deep Learning," *2023 IEEE Physical Assurance and Inspection of Electronics (PAINE)*, Huntsville, AL, USA, 2023, pp. 1-7, doi: 10.1109/PAINE58317.2023.10317976.

25. A. Ghimire, A. N. Asiri, B. Hildebrand, and **F. Amsaad**, "Implementation of Secure and Privacy-aware AI Hardware using Distributed Federated Learning," *2023 IEEE 16th Dallas Circuits and Systems Conference (DCAS)*, Denton, TX, USA, 2023, pp. 1-6, doi: 10.1109/DCAS57389.2023.10130231.

26. M. Baza, R. Amer, **F. Amsaad**, M. Mahmoud, and W. Alasmary, "Efficient Privacy-preserving Charging Coordination with Linkability-resistance in the Smart Grid," *2021 IEEE Globecom Workshops (GC Wkshps)*, Madrid, Spain, 2021, pp. 1-5, doi: 10.1109/GCWkshps52748.2021.9681950.

27. A. Shafee, M. Nabil, M. Mahmoud, W. Alasmary, and **F. Amsaad**, "Detection of Denial of Charge (DoC) Attacks in Smart Grid Using Convolutional Neural Networks," *2021 International Symposium on Networks, Computers and Communications (ISNCC)*, Dubai, United Arab Emirates, 2021, pp. 1-7, doi: 10.1109/ISNCC52172.2021.9615776.

28. **F. Amsaad** and S. Köse, "A Lightweight Hardware-based Authentication for Secure Smart Grid Energy

Storage Units," *2021 IEEE 7th World Forum on Internet of Things (WF-IoT)*, New Orleans, LA, USA, 2021, pp. 443-448, doi: 10.1109/WF-IoT51360.2021.9595440.

29. *D. Halder*, **F. Amsaad**, N. Fourty, and *B. Hildebrand*, "A Low-Power IoT-enabled Smart Monitoring System for Efficient Product Delivery," *2021 IEEE International Midwest Symposium on Circuits and Systems (MWSCAS)*, Lansing, MI, USA, 2021, pp. 692-695, doi: 10.1109/MWSCAS47672.2021.9531872.

30. A. Razaque, M. B. H. Frej, D. Sabyrov, A. Shaikhyn, **F. Amsaad**, and A. Oun, "Detection of Phishing Websites using Machine Learning," *2020 IEEE Cloud Summit*, Harrisburg, PA, USA, 2020, pp. 103-107, doi: 10.1109/IEEECloudSummit48914.2020.00022.

31. **F. Amsaad** and S. Köse, "A Trusted Authentication Scheme for IoT-based Smart Grid Applications," *2020 IEEE 6th World Forum on Internet of Things (WF-IoT)*, New Orleans, LA, USA, 2020, pp. 1-6, doi: 10.1109/WF-IoT48130.2020.9221442.

32. Abdul Razaque, **F. Amsaad**, Muder Almiani, Duisen Gulsezim;, Mohammad Adnan Almahameed, Ayman Al-Dmour, Meer Jaro Khan, and Raouf Ganda "Successes and Failures in Exploring Biometric Algorithms in NIST Open Source Software and Data," *2020 Seventh International Conference on Software Defined Systems (SDS)*, Paris, France, 2020, pp. 231-234, doi: 10.1109/SDS49854.2020.9143889.

33. Abdul Razaque, **F. Amsaad**, Muder Almiani, Wan Xiaoya, Li Shiyu, Raouf Ganda, Majdi Rawashdeh, and Amer AlRahayfeh "Efficient Context-aware File System Approach," *2020 Seventh International Conference on Software Defined Systems (SDS)*, Paris, France, 2020, pp. 226-230, doi: 10.1109/SDS49854.2020.9143956.

34. A. Razaque, **F. Amsaad**, M. J. Khan, A. Saule Toksanovna, A. Oun, and **M. Almiani**, "Privacy Preserving Medium Access Control Protocol for Wireless Body Area Sensor Networks," *2019 IEEE National Aerospace and Electronics Conference (NAECON)*, Dayton, OH, USA, 2019, pp. 212-217, doi: 10.1109/NAECON46414.2019.9057832.

35. A. Razaque, **F. Amsaad**, C. Mengjie Cherry, L. Jiahui Linda, and A. Oun, "Smart Phone as Toolbox for Height Measurement," *2019 IEEE National Aerospace and Electronics Conference (NAECON)*, Dayton, OH, USA, 2019, pp. 425-429, doi: 10.1109/NAECON46414.2019.9058290.

36. Duisen Gulsezim, Seiitkaliyeva Zhansaya, Abdul Razaque, Yestayeva Ramina, **F. Amsaad**, Muder Almiani, Raouf Ganda, and Ahmed Oun "Two Factor Authentication using Twofish Encryption and Visual Cryptography Algorithms for Secure Data Communication," *2019 Sixth International Conference on Internet of Things: Systems, Management and Security (IOTSMS)*, Granada, Spain, 2019, pp. 405-411, doi: 10.1109/IOTSMS48152.2019.8939261.

37. Abdul Razaque, A. Kanapina, M. Sailaubek, D. Tsoy, Z. Turganov, Muder Almiani, **F. Amsaad**, and Mohammad Adnan Almahamed "Pair Data Division Algorithm For Handling Data Classification," *2019 Sixth International Conference on Social Networks Analysis, Management and Security (SNAMS)*, Granada, Spain, 2019, pp. 316-320, doi: 10.1109/SNAMS.2019.8931871.

38. N. Tastan, A. Razaque, M. Ben Haj Frej, A. Saule Toksanovna, R. M. Ganda, and **F. Amsaad**, "Burglary Detection Framework for House Crime Control," *2019 19th International Conference on Computational Science and Its Applications (ICCSA)*, St. Petersburg, Russia, 2019, pp. 152-157, doi: 10.1109/ICCSA.2019.00015.

39. **F. Amsaad**, A. Sherif, A. Dawoud, M. Niamat, and S. Kose, "A Novel FPGA-based LFSR PUF Design for IoT and Smart Applications," *NAECON 2018 - IEEE National Aerospace and Electronics Conference*, Dayton, OH, USA, 2018, pp. 99-104, doi: 10.1109/NAECON.2018.8556699.

40. A. Razaque, **F. Amsaad**, M. A. Khaskheli, M. J. Khan, A. Hassan, and A. M. Ilyas, "Secure and Energy Efficient Mobile Payment Protocol," *2018 IEEE Long Island Systems, Applications and Technology Conference (LISAT)*, Farmingdale, NY, USA, 2018, pp. 1-6, doi: 10.1109/LISAT.2018.8378039.

41. A. Razaque, **F. Amsaad**, L. Jiazhi, G. Huayue, and A. Hassan, "Incentive mechanisms for crowdsensing," *2018 IEEE Long Island Systems, Applications and Technology Conference (LISAT)*, Farmingdale, NY, USA, 2018, pp. 1-6, doi: 10.1109/LISAT.2018.8378038.

42. N. Pundir, N. A. Hazari, **F. Amsaad**, and M. Niamat, "A novel hybrid delay based physical unclonable function immune to machine learning attacks," *2017 IEEE National Aerospace and Electronics*

Conference (NAECON), Dayton, OH, USA, 2017, pp. 84-87, doi: 10.1109/NAECON.2017.8268749.

43. N. Pundir, **F. Amsaad**, M. Choudhury, and M. Niamat, "Novel technique to improve strength of weak arbiter PUF," *2017 IEEE 60th International Midwest Symposium on Circuits and Systems (MWSCAS)*, Boston, MA, USA, 2017, pp. 1532-1535, doi: 10.1109/MWSCAS.2017.8053227.

44. **F. Amsaad**, M. Choudhury, C. R. Chaudhuri, and M. Niamat, "An innovative delay based algorithm to boost PUF security against machine learning attacks," *2016 Annual Connecticut Conference on Industrial Electronics, Technology Automation (CT-IETA)*, Bridgeport, CT, USA, 2016, pp. 1-6, doi: 10.1109/CT-IETA.2016.7868242.

45. A. P. D. Nath, **F. Amsaad**, M. Choudhury, and M. Niamat, "Hardware-based novel authentication scheme for advanced metering infrastructure," *2016 IEEE National Aerospace and Electronics Conference (NAECON) and Ohio Innovation Summit (OIS)*, Dayton, OH, USA, 2016, pp. 364-371, doi: 10.1109/NAECON.2016.7856831.

46. **F. Amsaad**, C. R. Chaudhuri, and M. Niamat, "Reliable and reproducible PUF based cryptographic keys under varying environmental conditions," *2016 IEEE National Aerospace and Electronics Conference (NAECON) and Ohio Innovation Summit (OIS)*, Dayton, OH, USA, 2016, pp

47. A. Razaque, **F. Amsaad**, R. Kumar, M. Abdulgader, S. K. Jagadabi, and S. Sheela, "Pebble Watch security assessment," *2016 IEEE Long Island Systems, Applications and Technology Conference (LISAT)*, Farmingdale, NY, USA, 2016, pp. 1-4, doi: 10.1109/LISAT.2016.7494138.

48. A. Razaque, S. Mudigulam, K. Gavini, **F. Amsaad**, M. Abdulgader, and G. S. Krishna, "H-LEACH: Hybrid-low energy adaptive clustering hierarchy for wireless sensor networks," *2016 IEEE Long Island Systems, Applications and Technology Conference (LISAT)*, Farmingdale, NY, USA, 2016, pp. 1-4, doi: 10.1109/LISAT.2016.7494136.

49. A. Razaque, M. Abdulgader, C. Joshi, **F. Amsaad**, and M. Chauhan, "P-LEACH: Energy efficient routing protocol for Wireless Sensor Networks," *2016 IEEE Long Island Systems, Applications and Technology Conference (LISAT)*, Farmingdale, NY, USA, 2016, pp. 1-5, doi: 10.1109/LISAT.2016.7494137.

50. T. Hoque, M. Mustapa, **F. Amsaad**, and M. Niamat, "Assessment of NAND based ring oscillator for hardware Trojan detection," *2015 IEEE 58th International Midwest Symposium on Circuits and Systems (MWSCAS)*, Fort Collins, CO, USA, 2015, pp. 1-4, doi: 10.1109/MWSCAS.2015.7282110.

51. **F. Amsaad**, T. Hoque, and M. Niamat, "Analyzing the performance of a configurable ROPUF design controlled by programmable XOR gates," *2015 IEEE 58th International Midwest Symposium on Circuits and Systems (MWSCAS)*, Fort Collins, CO, USA, 2015, pp. 1-4, doi: 10.1109/MWSCAS.2015.7282135.

Nomination and Received Academic Awards

- Received 2023-2024 Presidential Award for Faculty Excellence: **(Early Career Achievement Award)**, Wright State University (University Level Award), April 2024.
    - **(Link:)** https://shorturl.at/mPgbl

- One of the recipients of the 2023 U.S. Department of the Air Force Summer Faculty Fellowship Program (**2023 SFFP Awardee**), funded by Air Force Office of Scientific Research (AFOSR), 2023.
    - **(Link:)** https://afsffp.sysplus.com/SFFP/awardees/2023.aspx

- Nominated for the **2023-2024 President Advisor of the Year Award**, Wright State University, 2024.

- One of the recipients of the **GameAbove Faculty First Awards**, Eastern Michigan University (University Level Award), 2020.
    - **(Link:)** https://today.emich.edu/story/story/11375

- Received the **IEEE Best Graduate Student Award**, IEEE region 4 and College of Engineering, University of Toledo, OH, May 2016.

- Received an **NSF Travel Grant Award** to attend the third workshop on Security and Privacy, University of Houston, Houston, TX, August 2018.

- Nominated for **Best Dissertation Award**, University of Toledo, Toledo, OH, USA, Dec. 2017.

- Received **Advising Appreciations Award**, Saudi Arabia Cultural Mission at US, 2016.

Received Student Awards

- Student Name: Al Amin Hossain (PhD student)
  - Received 2024 Department of Defense scholarship called SMART — Science, Mathematics and Research for Transformation:
  - **(Link:)** https://webapp2.wright.edu/web1/newsroom/2024/08/26/wright-state-ai-researcher-awarded-smart-scholarship-from-defense-department/

- Student Name: Habeeb Tunde Sanni (Master Minority International Student)
  - Received 2024 Internship and offer with Industry in CA

- Student Name: Sayed Nowroz (Mastre Studnet)
  - Received 2024 Hardware Engineer Internship with Amazon Web Services
  - **(Link:)** https://www.linkedin.com/company/amazon-web-services/posts/

- Student Name: Harshdeep Singh
  - His Paper received the third place in the, Best Poster Award, IEEE Computer Society Annual Symposium on VLSI Knoxville, Tennessee, USA July 1-3, 2024
  - **(Link:)** https://shorturl.at/pOR8r
- Student Name: Anusha Verma, Ghazal Ghajari, and K M Tawsik Jawad
  - Two Papers received the Seconed and third place in the, Best Poster Award, 2024 IEEE National Aerospace and Electronics Conference (NAECON) — July 15-18, 2024, Dayton, Ohio, USA
  - **(Link:)** https://attend.ieee.org/naecon-2024/poster-competition/

Editorial Board Activities

1. Section Editor

- Computing & AI Connect Journal
  - **(Link:)** https://www.scifiniti.com/journals/computingai-connect/editorial-board

2. Topical Advisory Panel and Reviewer Board Member (2019 – Now)

- Electronics Journal: (Q2 Journal, IF = 2.9)
  - **(Link:)** https://shorturl.at/Zj4Lb
  - **(Link:)** https://shorturl.at/2WdkJ

3. Guest Editor

- **Special Session Title:** *Hardware Intrinsic Security for Trusted Electronic Systems*

- **(Link:)** https://shorturl.at/3Lamk

- **Special Session Title:** *Secure and Privacy-Preserving Smart Healthcare*
  - **(Link:)** ://t.ly/kGikt

- **Special Session Title:** *Big Data Privacy-Preservation*
  - **(Link:)** https://t.ly/az0cn

- **Special Session Title:** *Application of Machine Learning in Big Data*
  - **(Link:)** https://t.ly/NiuDq

Professional and Honor Membership

- IEEE Senior Membership
- Member of IEEE Dayton Section
- Advisor of the IEEE Student Organization at Wright State University
- ACM Membership
- Full Membership in the Sigma Xi Scientific Research Honor Society

Speaker/Organizer of Conference Sessions

- IEEE International Conference on PHYSICAL ASSURANCE and INSPECTION of ELECTRONICS (PAINE)
  - Member of the Program Committee (PAINE 2023 and 2024):
    * **(Link:)** https://paine-conference.org/program-committee/
  - Invited Speaker (PAINE 2023):
    * **(Link:)** https://paine-conference.org/speakers-2023-3/

- IEEE National Aerospace and Electronics Conference (NAECON)
  - Invited Speaker, the 76th IEEE National Aerospace and Electronics Conference (NAECON 2024), STEM Education Workshop:
    * **(Link:)** https://attend.ieee.org/naecon-2024/invited-speakers/
  - Member of the 2024 IEEE NAECON Conference Planning Committee
  - Poster and Paper Competition Co-chair of the 2024 IEEE NAECON Conference

- IEEE Computer Society Annual Symposium on VLSI (ISVLSI 2024)
  - Chair and Organizer of a Special Session on Assured and Trusted Semiconductor Microelectronics Integrated Circuits (ICs):
    * **(Link:)** https://t.ly/CI2bm

- International Symposium on Smart Electronic Systems (IEEE-iSES, formerly IEEE-iNIS)
  - 2020 Track Chair (Hardware/Software for Vehicular Intelligent Systems (VIS)):
    * **(Link:)** https://t.ly/eGV2f
  - 2021 Track Chair (Hardware/Software for Vehicular Intelligent Systems (VIS)):
    * **(Link:)** https://bit.ly/3xty8Os

– Delivered a talk at the DEPARTMENT SPEAKER SERIES, Computer Science and Engineering, Wright State University, entitled: *Hardware-oriented Security for Trusted Microelectronic*, Friday, October 28, Fall 2022, Noon to 1 pm:
  * **(Link:)** https://bit.ly/3XuydfG

- **Guest Speaker:** Delivered a talk at the Engineering Graduate Research Seminar Series, Saint Louis University, entitled: *Hardware Intrinsic Security for Trusted Electronic Systems*, Spring 2022.
  – **(Link:)** https://bit.ly/4cqXMSO

- **Guest Speaker:** Invited to deliver a research seminar in resent hardware security research, the University of Toledo, OH, Spring 2020 and Spring 2022:
  – **(Link:)** https://bit.ly/3xkjVDE

- **Guest Speaker:** Invited to deliver a talk in ICIoT-2019, International Conference on Internet of Things, March 11-15, 2019, SRM Institute of Science and Technology:
  – **(Link:)** https://iciot.github.io/

Student Advising and Mentoring

A. <u>Current PhD Candidates & PhD Students</u>

<u>*Note:*</u> (*"*" Represents Female or Underrepresented Minority Student*)

(1.) **<u>Student Name:</u>** *Khaled Saleh*
- **Topic of Research:** *"Hardware/Software Obfuscation and De-obfuscation"*
- **Status:** *PhD Candidate*
- **Expected Graduation:** Spring 2025
- **Support Received :** Funded via NSA grant: Fall 2023

(2.) **<u>Student Name:</u>** *Al Amin Hossain*
- **Topic of Research:** *"Tiny ML Side channel Attacks Countermeasure and Security"*
- **Status:** *PhD Candidate*
- **Expected Graduation:** Funded by NSA Grant for Fall 2023, Spring 2024, Summer 2024
- **Support Received:** Funded by NSA grant: Fall 2023; Funded by AFRL Grant for Spring 2023 and Summer 2023
- **Received Award:** Received Competitive DoD PhD SMART Fellowship in Summer 2024

(3.) **<u>Student Name:</u>** *Abdulrahman Albaiz*
- **Topic of Research:** *"Secure and Trustworthy Embedded AI"*
- **Status:** *PhD Student*
- **Expected Graduation:** Fall 2025
- **Support Received:** Funded via Saudi Arabian Government

(4.) **<u>Student Name:</u>** *Mithun Kumar PK*
- **Topic of Research:** *"AIoT Hardware Security"*
- **Status:** *PhD Student*
- **Expected Graduation:** Fall 2026
- **Support Received:** Funded by AFRL Grant (Fall 2023, Spring 2024, Summer 2024)

(5.) **<u>Student Name:</u>** *Ghazal Ghajari*
- **Topic of Research:** *"Security Countermeasure Against Adversarial Machine Learning Attacks"*

- **Status:** *PhD Student*
- **Expected Graduation:** Fall 2026
- **Support Received:** Funded by AFRL Grant (Fall 2023, Spring 2024, Summer 2024)

(6.) **Student Name:** *Sufian Al Majmaie*
- **Topic of Research:** *"Hardware-based Security Primitives For Device Authentication and Secret Key Generations"*
- **Status:** *PhD Student*
- **Expected Graduation:** Fall 2026
- **Support Received:** Funded by AFRL Grant (Fall 2023, Spring 2024, Summer 2024)

(7.) **Student Name:** *Soham Roy*
- **Topic of Research:** *"Hardware Trojan Detection"*
- **Status:** *PhD Student*
- **Stat Date:** Fall 2024
- **Support Received:** Funded by DAGSI/AFRL

(8.) **Student Name:** *Eric Parsley*
- **Topic of Research:** *"Quantum Computing Security"*
- **Status:** *PhD Student*
- **Stat Date:** Fall 2024
- **Support Received:** Funded by NSA

(9.) **Student Name:** *Dominic Mohrhardt*
- **Topic of Research:** *"Quantum Computing Security"*
- **Status:** *PhD Student*
- **Stat Date:** Fall 2024
- **Support Received:** Self Funded - AFRL

(10.) **Student Name:** *Nguyen Thien An*
- **Topic of Research:** *"Hardware Trojan Detection"*
- **Status:** *PhD Student*
- **Stat Date:** Fall 2024
- **Support Received:** Funded by NSA

B. Current Master Students with Thesis

(1.) **Student Name:** **Habeeb Tunde Sanni*
- **Topic of Research:** *"ML for Industrial Engineering"*
- **Status:** *Master Student*
- **Expected Graduation:** Summer 2024 or Fall 2024
- **Support Received:** Funded by AFRL Grant (Fall 2023, Spring 2024, Summer 2024)
- Received Internship in summer 2024 and an offer to work with industry this semester Fall 2024

(2.) **Student Name:** *Sayed Nowroz*
- **Topic of Research:** *"Tiny and Embedded AI Hardware Security"*
- **Status:** *Master Student*
- **Expected Graduation:** Summer 2025
- **Support Received:** Funded by AFRL Grant (Fall 2023, Spring 2024, Summer 2024)
- **Received Internship Award:** Received Competitive Internship award from Amazon Web Services in Summer 2024

(3.) **Student Name:** *Mohammed Alkurdi*

- **Topic of Research:** *"Enhancing the Robustness of AI Hardware Trojan Detection against Adversarial Machine Learning"*
- **Status:** *Master Student*
- **Expected Graduation:** Fall 2024
- **Support Received:** Funded by AFRL Grant (Fall 2023, Spring 2024, Summer 2024)

(4.) <u>**Student Name:**</u> *Mani Gurram*
- **Topic of Research:** *"Detection of Golden Free Signature Hardware Trojan Modification Attacks using EM Side Channel Analysis"*
- **Status:** *Master Student*
- **Expected Graduation:** Fall 2024
- **Support Received:** Funded by AFRL Grant (Fall 2023, Spring 2024, Summer 2024)

(5.) <u>**Student Name:**</u> **Mounika Thatikonda*
- **Topic of Research:** *"Novel Deep Learning and Explainable AI for Mitigation of Deep Fool Attacks in Object Detection"*
- **Status:** *Master Student*
- **Expected Graduation:** Fall 2024
- **Support Received:** Funded by AFRL Grant (Fall 2023, Spring 2024, Summer 2024)

(6.) <u>**Student Name:**</u> **Anusha Verma*
- **Topic of Research:** *"Trustworthy Explainable AI for Early Detection of Chronic Kidney Disease"*
- **Status:** *Master Student*
- **Expected Graduation:** Summer 2024 or Fall 2024
- **Support Received:** Funded by AFRL Grant (Fall 2023, Spring 2024, Summer 2024)

C. <u>Graduated Master Students with Thesis</u>

(1.) <u>**Student Name:**</u> *K M Tawsik Jawad*
- **Thesis Title:** *AI-Driven Approach for Early Prognosis of Chronic Kidney Disease Using Explainable AI and Ensemble Learning*
- **OhioLink:** Still not Defended
- **Date:** July, 2024
- **Place:** Wright State University
- **Committee:** Fathi Amsaad, Ph.D (Advisor), Wen Zhang, PhD (Department Internal Committee Member), Clintoria Williams (Dept. of Neuroscience, Cell Biology, and Physiology), PhD (University Internal Committee Member) and Huaining Cheng (AFRL), PhD (External Committee Member)
- Received PhD scholarship from University of Cincinnati (UC)

(2.) <u>**Student Name:**</u> *Ashutosh Ghimire*
- **Thesis Title:** *An ML-Assisted Golden-Free Hardware Trojan Localization and Detection Approach for Trusted Microelectronics*
- **OhioLink:** (https://shorturl.at/SKFxq)
- **Date:** April, 2024
- **Place:** Wright State University
- **Committee:** Fathi Amsaad, Ph.D (Advisor), Lingwei Chen, Ph.D. (Department Internal Committee Member), Tanvi Banerjee, Ph.D. (Department Internal Committee Member), Vincent Schmidt (AFRL), Ph.D. (External Committee Member)

(3.) <u>**Student Name:**</u>*Harshdeep Singh*

- **Thesis Title:** *AI-Enabled Hardware Security Approach for Aging Classification and Manufacturer Identification of SRAM PUFs*
- **OhioLink:** (https://shorturl.at/au24k)
- **Date:** April, 2024
- **Place:** Wright State University
- **Committee:** Fathi Amsaad, Ph.D (Advisor), Wen Zhang, Ph.D. (Department Internal Committee Member), and John Emmert (University of Cincinnati), Ph.D. (External Committee Member)
- Received an offer for an AI consultant company

(4.) <u>**Student Name:**</u> *Niraj Prasad Bhatta*
- **Thesis Title:** *ML-Assisted Side Channel Security Approaches for Hardware Trojan Detection and PUF Modeling Attacks*
- **OhioLink:** (https://shorturl.at/Lxkjp)
- **Date:** April, 2024
- **Place:** Wright State University
- **Committee:** Fathi Amsaad, Ph.D (Advisor), Wen Zhang, Ph.D. (Department Committee Member), and Kenneth Hopkinson (AFIT), Ph.D. (External Committee Member)

(5.) <u>**Student Name:**</u> *Tabassum Simra*
- **Thesis Title:** *A Novel Knowledge-based Federated Deep Learning Approach for Enhancing Security and Privacy Preservation in IoT Edge Computing Applications*
- **OhioLink:** (https://rb.gy/qu0xnq)
- **Date:** December, 2023
- **Place:** Wright State University
- **Committee:** Fathi Amsaad, Ph.D (Advisor), Wen Zhang, Ph.D. (Department Internal Committee Member), and Huaining Cheng (AFRL), Ph.D. (External Committee Member)

(6.) <u>**Student Name:**</u> *Bharath Reedy Konatham*
- **Thesis Title:** *A Secure and Efficient IIoT Anomaly Detection Approach Using a Hybrid Deep Learning Technique*
- **OhioLink:** (https://rb.gy/3q1q1w)
- **Date:** July, 2023
- **Place:** Wright State University
- **Committee:** Fathi Amsaad, Ph.D (Advisor), Travis E. Doom, Ph.D. Thomas Wischgoll, Ph.D. (Department Internal Committee Member) Subhashini Ganapathy, Ph.D. (Department/College Internal Committee Member), Vincent Schmidt (AFRL), Ph.D. (External Committee Member),

(7.) <u>**Student Name:**</u> *Niveshitha Niveshitha*
- **Thesis Title:** *Efficient Cloud-based ML-Approach for Safe Smart Cities*
- **OhioLink:** (https://rb.gy/bmjkxd)
- **Date:** April, 2023
- **Place:** Wright State University
- **Committee:** Fathi Amsaad, Ph.D (Advisor) Travis E. Doom, Ph.D. (Department Internal Committee Member), Thomas Wischgoll, Ph.D. (Department Internal Committee Member), Kenneth Hopkinson (AFIT), Ph.D. (External Committee Member)

(8.) <u>**Student Name:**</u> *Vishnu Vardhan Baligodugula*
- **Thesis Title:** *Unsupervised-based Distributed Machine Learning for Efficient Data Clustering and Prediction*
- **OhioLink:** (https://rb.gy/7lemcr)
- **Date:** April, 2023

- **Place:** Wright State University
- **Committee:** Fathi Amsaad, Ph.D (Advisor), Travis E. Doom, Ph.D. (Department Internal Committee Member), Subhashini Ganapathy, Ph.D. (Department/College Internal Committee Member),, and Vincent Schmidt (AFRL), Ph.D. (External Committee Member)

Undergraduates and Honer Students Projects and Supervision at WSU

(1.) <u>**Student Name:**</u> *Logan Isaac Pence*
- **Topic of Research:** *"Tiny Machine Learning Hardware Security"*
- **Status:** *4+1 B.Sc. + MS, Honor Student*
- **Supported Semesters:** FAll 2023 Spring 2024
- **Funding Source:** AFRL and NSA projects

(2.) <u>**Student Name:**</u> *Ramsey Ly*
- **Topic of Research:** *"Detection of Hardware Trojan"*
- **Status:** *Undergraduates Student*
- **Supported Semesters:** Fall 2023 and Spring 2024
- **Funding Source:** NSA project

(3.) <u>**Student Name:**</u> *Nicholas Michael*
- **Topic of Research:** *"Detection of Hardware Trojan"*
- **Status:** *Undergraduates Student*
- **Supported Semesters:** Fall 2023 and Spring 2024
- **Funding Source:** NSA project

(4.) <u>**Student Name:**</u> *Jacob Buchanan*
- **Topic of Research:** *"FPGA Hardware Trojan"*
- **Status:** *Undergraduates Student*
- **Supported Semesters:** Spring 2024
- **Funding Source:** NSA project

(5.) <u>**Student Name:**</u> *Douglas J Townsell*
- **Topic of Research:** *"AI for Hardware Security"*
- **Status:** *Undergraduates Student*
- **Expected Graduation:** Fall 2023, Spring 2024
- **Funding Source:** NSA project

Graduated Students Supervision at Eastern Michigan University

- **Dipal Halder**, (MS Students)   2019 - 2021
- **Mosladdin Shueb,** (MS Student)   2019 - 2021
- **Brian Hildebrand**, (PhD Student)   2020 - 2022

Teaching Assignments

1. Wright State University (Assistant Professor 2022 - Current)

<u>**Fall 2024**</u>

- Distributed Computing (CEG-7370-01) - 202480
- Embedded Systems (CEG-7360-01) - 202480
- Master's Thesis Research in Computer Engineering (CEG-7950-27) - 202480
- Master's Thesis Research in Computer Science (CS-7950-27) - 202480
- Residency Research in Computer Science (CS-8940-27) - 202480

Spring 2024
- Distributed Computing (CEG-7370-01) - 202430
- Independent Study in Computer Engineering (CEG-8920-27) - 202430
- Independent Study in Computer Science (CS-4970-27) - 202430
- Independent Study in Computer Science (CS-8920-27) - 202430
- M.S. Thesis Research in Industrial & Human Factors Engineering (IHE-7950-12) - 202430
- Master's Thesis Research in Computer Engineering (CEG-7950-27) - 202430
- Master's Thesis Research in Computer Science (CS-7950-27) - 202430
- PhD Candidacy Exam (CEG-8960-27) - 202430
- Residency Research in Computer Engineering (CEG-8940-27) - 202430
- Residency Research in Computer Science (CS-8940-27) - 202430

Summer 2024
- Independent Study in Computer Engineering (CEG-7920-C27) - 202440
- Independent Study in Computer Science (CS-7920-C27) - 202440
- M.S. Thesis Research in Industrial & Human Factors Engineering (IHE-7950-C12) - 202440
- Master's Thesis Research in Computer Engineering (CEG-7950-C27) - 202440
- Residency Research in Computer Engineering (CEG-8940-C27) - 202440

Fall 2023
- Distributed Computing (CEG-7370-01) - 202380
- Independent Study (CEG-4970-27) - 202380
- Independent Study in Computer Engineering (CEG-8920-27) - 202380
- Independent Study in Computer Science (CS-8920-27) - 202380
- Master's Thesis Research in Computer Engineering (CEG-7950-27) - 202380
- Master's Thesis Research in Computer Science (CS-7950-27) - 202380
- Residency Research in Computer Engineering (CEG-8940-27) - 202380
- Residency Research in Computer Science (CS-8940-27) - 202380

Spring 2023
- Distributed Computing (CEG-7370-01) - 202330
- Independent Study in Computer Engineering (CEG-7920-27) - 202330
- Independent Study in Computer Science (CS-6970-27) - 202330
- Independent Study in Computer Science (CS-8920-27) - 202330
- Residency Research in Computer Science (CS-8940-27) - 202330
- Master's Thesis Research in Computer Engineering (CEG-7950-27) - 202330
- Residency Research in Computer Engineering (CEG-8940-27) - 202330
- Master's Thesis Research in Computer Science (CS-7950-27) - 202330

Summer 2023
- Residency Research in Computer Engineering (CEG-8940-C27) - 202340
- Residency Research in Computer Science (CS-8940-27) - 202340
- Master's Thesis Research in Computer Engineering (CEG-7950-C27) - 202340
- Master's Thesis Research in Computer Science (CS-7950-C27) - 202340
- Independent Study in Computer Science (CS-6970-C27) - 202340

- Independent Study in Computer Science (CS-7920-C27) - 202340
- Independent Study in Computer Engineering (CEG-7920-C27) - 202340

Fall 2022
- Distributed Computing (CEG-7370-01) - 202280
- MSCEG Thesis Research (CEG-7950-20) - 202280

2. Eastern Michigan University (Assistant Professor 2019 - 2022)

- **Fall 2019:** CET-215: Computer Hardware and Software (A+), and IA-244 Administration of Computer Systems
- **Winter 2020 (online):** IT-150: Networking I and IA-244 Administration of Computer Systems
- **Summer 2020 (online):** IA-479/592 Hardware Security and IA-244 Administration of Computer Systems
- **Fall 2020 (online):** IT-150: Networking I
- **Winter 2021 (online)**: IT-150: Networking I and IA-244 Administration of Computer Systems
- **Summer 2021 (online):**(Summer UG Program Director): IA-499 Advanced Cybersecurity Topics (IIoT and Embedded System Security Projects), IA-387L4 Co-op Education Experience
- **Fall 2021 (online and F2F):**(Graduate Program Director): IT-150 Networking, IA-499 Advanced Cybersecurity Topics (IoT and Embedded System Security), COT 879 Secure Quantum Computing
- **Winter 2022 and Summer 2022 (online and F2F):**(Graduate Program Director + Summer Research Award)

3. University of Southern Mississippi (Assistant Professor 2018 - 2019)

- **Fall 2018:** CE 101 - Introduction to Computer Engineering
- **Spring 2019:** CE 230 - Computer Systems

4. University of South Florida, Visiting Instructor (2016 - 2017)

- **Fall 2016: CDA 4205:** Computer Architecture (3 credit hours, Lecture), CDA 4213: CMOS-VLSI (3 credit hours, Lecture + Lab), CIS 4930: Hardware Security (3 credit hours, Lecture + Lab)
- **Spring 2017: CDA 4205:** Computer Architecture (3 credit hours, Lecture), CDA 3201: Computer Logic Design (3 credit hours, Lecture + Lab), CDA 4203: Computer Systems Design (3 credit hours, Lecture + Lab)

5. Bowling Green State University, Adjunct Instructor, (2014 - 2016)

- **Fall 2014:** ECET-3490 Digital Computer Analysis (3 credit hours, 5 hours Lecture/Lab), ECET-4450 Wireless Comm. Systems (3 credit hours, 5 hours Lecture/Lab).
- **Spring 2015:** ECET-2490 Digital Elec Comp. & Sys. (3 credit hours, 5 hours Lecture/Lab)
- **Fall 2015:** ECET-1960 Elect. and Electronic Systems (3 credit hours, 5 hours Lecture/Lab)

6. University of Toledo, GTA, 2012 - 2016)

- **Fall 2012: EECS 1100:** Digital Logic Design Lab (1 credit hour, 1-hour Lab)
- **Spring 2013, Fall 2013 & 2014, Summer 2013 & 2014:** EECS-2340: Electric Circuits for Non-Maj (4 credit hours)

- **Fall 2014:** EECS Tutor (5 hours per week, Engineering Library)
- **Spring 2015:** EECS Tutor (5 hours per week, Engineering Library), EECS-4020: Senior Design Project-II Lab (1 credit hour, 1-hour Lab), EECS-4010: Senior Design Project-I Lab (1 credit hour, 1-hour Lab), EET-3350: Digital Systems Design Lab (1 credit hour, 3 hours Lab)
- **Spring 2015:** EET-1010: Resistive Circuits (4 credit hours, 5 hours Lecture and Lab)
- **Fall 2015:** EET-2230: Assembly Language Programming (4 credit hours, 5 hours Lecture and Lab)
- **Spring 2016:** ENET-3050: Fundamentals of Electricity (4 credit hours, 5 hours Lecture and Lab)

External Reviewer

Journals: IEEE Transactions on Artificial Intelligence, *IEEE Internet of Things*, *ACM Transactions on Embedded Computing Systems*, *IEEE Access*, *IEEE Transactions on Very Large Scale Integration (VLSI) Circuits (TVLSI)*, *IEEE Transactions Computer-Aided Design (TCAD)*, *IEEE Electron Device Letters (EDL)*, *IET Circuits, Devices & Systems*, *MDPI electronics, Applied, Cryptography Journals.*

Conferences: *International Conference on Computer-Aided Design (ICCAD)*, *Design Automation and Test in Europa (DATE)International Conference on Hardware Oriented Security and Trust (HOST)*, *International Conference on Circuits and Systems (ISCAS)*, *IEEE International Conference on Physical Assurance and Inspection of Electronics (PAINE)*, *IEEE Computer Society Annual Symposium on VLSI (ISVLSI)*, *International Conference on VLSI Design (VLSID)*, IEEE International Midwest Symposium on Circuits and Systems (MWSCAS), *International Conference on Computer Design (ICCD).*

Academic Services

1. Services at Wright State University (WSU): (2022 - Currant)
- Served on the CSE TNT Faculty Search Committee (2024)
- Currently serving as a member of the Undergraduate Academic Policies Committee, a standing committee of the Faculty Senate (University level), (2023-2025)
- Currently serving as the PI of the ADMETE grant (2022-2024), 30 million grant
- Serving as the advisor for the Institute of Electrical and Electronics Engineers (IEEE) Student Organization at Wright State University, (2024-now)
- Serving as an advisor for the Nepal student Club at Wright State University (2023-now)
- Served on the CSE Dean Search Committee at Wright State University, (2023).
- Led the search and hiring of Postdoctoral positions, (2023)
- Contributed to the meeting with the ABET Evaluation Committee visited Wright State in 2023
- Helped with the organization of an event at Wright Brothers Day events, 2023
- Represented Wright State at an event with the AFRL, 2023
- Serving as a member of the Computer Science and Engineering Graduate Studies Committee (CSE-GSC), (2022–Present)
- Led the search committee for ADMETE Lab Manager, (2022)

2. Services at Eastern Michigan University (EMU): (2019 - 2022)
- The SISAC Graduate Program Coordinator (GPC) at EMU, Fall 2021–Summer 2022
- The Acting SISAC Undergraduate Program Coordinator (PC) at EMU, Summer 2022
- Member of SISAC ABET and NSA Committee, Fall 2020–Summer 2021
- Co-Chair of the SISAC Instructional Curriculum Committee (ICC), Fall 2021–Summer 2021
- Chair and member of PhD and MS SISC Committee, Fall 2019–Summer 2021
- Chair of SISAC Finance Committee, Fall 2020–Summer 2021
- Member of SISAC Search Committee, Fall 2020–Winter 2021

- Member of the University Senate of Educational Environment and Facilities Committee, 2019–Summer 2021
- Member of the College of Engineering and Technology Faculty Council (CET-COT), Fall 2020–Summer 2021
- Member of the College Grievance Committee, Fall 2020–Summer 2021

Other Professional and Scholar Activities (2018 - 2024)

- Attendee online two NSF CAREER webinar (Online), May 6, 2024.
- Led in a technical Cyber security workshop at the International Conference on Big Data Science and Management Engineering, 19-21 January 2024, Changsha, China.
- Created many educational workshops, 3 in the Fall 2023, and 3 will be in the Spring 2024, in addition to a cybersecurity competition supported by the NSA grant.
- Fot two years (2023-2024) Led 2 months summer camp program, sposonded by Inytel and AFRL and developed five courses for the AFRL/Intel summer camp 2023 in the area of Semiconductor Microelectronics, Introduction to Microelectronics, Introduction to Microelectronics Design and Security, Introduction to Printed Circuit Boards Fabrication and Design, Cleanroom Microfabrication, and Introduction to Additive Manufacturing for Electronics.
- Attended 2022/2023 Florida Semiconductor Week, University of Florida, Gainesville, FL, Feb. 7–9 2023.
- Reviewer of a U.S. National Institute of Standards and Technology (NIST) grant, Title "Connected & Real-Time Supply Chain Visibility," reviewed in October 2022.
- Attended Intel 2022 Kick off conference, 2022 in Columbus, Ohio.
- Delivered a talk "hardware-oriented security for trusted microelectronic applications," Friday, October 28, 2022, 346 Russ Engineering.
- Submitted a proposal for hosting a conference, Proceedings of 3rd International Conference on Mathematical Modeling and Computational Science – First draft is Approval 2022.
- Delivered a research seminar in recent hardware security research, University of Toledo, OH, Feb. 2022.
- CHIPS and Science Act: Lead Wright State in many efforts: Midwest Microelectronics Consortium (MMEC), SCALES: Southeastern Consortium for Assured Leading-Edge Semiconductors.
- Contributed to writing white papers, proposals, and proposals to these hubs and DoD call for CHIPS and Science Act.
- Involved with WSU and CSU team to write proposals for CHIPs act Powerex company for the CHIPS and Science Act.
- Attended the 2020 IEEE Cloud Summit Conference, a virtual conference, Oct 21- 22, 2020.
- Attended the 2020 Seventh International Conference on Software Defined Systems (SDS), Paris, France, June 30th to July 3rd, 2020.
- Attended online the 7th IEEE World Forum on the Internet of Things (WF-IoT 2020), September, New Orleans, LA USA, 2020.
- Attended online Cybersecurity Education, Research, & Practice workshop, Kennesaw State University, Kennesaw GA, (Virtual) October 23-24, 2020.
- Attended online the 2020 North American International Cyber Summit, Virtual Conference Hosted by State of Michigan, October 7-8, 2020.
- Attendee online two NSF workshops online on improving undergraduate STEM education (IUSE), 2019 and 2020.
- Attended and Contributed to the 2019 WARREN B. NELMS ANNUAL IOT CONFERENCE 2019, December 3–4 (Tuesday – Wednesday), 2019, Hilton University of Florida, 2019.
- Attended the NAECON (National Aerospace & Electronics Conference) 2019, July 15 – 19, 2019 DAYTON, OH, USA.
- Attended online the Sixth International Conference on Internet of Things: Systems, Management and

Security (IOTSMS), Granada, Spain. October 22-25, 2019.

- Attended online the Sixth International Conference on Social Networks Analysis, Management and Security (SNAMS-2019), Granada, Spain, October 22-25, 2019.
- Attended many IEEE conferences and other conferences in my field, PAINE, HOST, GOMACH, NAECON, VLSID, etc.

References

1. Mohammed Niamat (PhD Advisor)
   Professor and Seiner IEEE/ACM member
   College of Engineering
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   Toledo, Ohio, 43606
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   Email: mohammed.niamat@utoledo.edu

2. Suliman Ashur (Former EMU - SISAC interim director)
   Professor
   Director, School of Visual and Built Environments
   Eastern Michigan University
   Ypsilanti, MI, US
   Email: sashur@emich.edu
   Phone: 734.487.1832

3. Amer Dawoud (My former director at USM Computer Engineering Program))
   Associate Professor
   University of Southern Mississippi
   Hattiesburg, MS, US
   Email: Amer.Dawoud@usm.edu
   Phone: 601.266.4949

4. Selçuk Köse (Colleagues at USF and Research Collaborator)
   Associate Professor
   Department of Electrical and Computer Engineering (ECE)
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   Rochester, New York, US
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   Phone: 585.275.1735

5. Mahmoud, Mohamed (Colleagues and Research Collaborator)
   Associate Professor
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   Cookeville, TN, USA
   Email: mmahmoud@tntech.edu
   Phone: 931.372.3677