

HABEEB OLUFOWOBI, Ph.D.

Assistant Professor, Department of Computer Science & Engineering

The University of Texas at Arlington

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CURRENT APPOINTMENT

- **Assistant Professor**, Department of Computer Science and Engineering, University of Texas at Arlington (UTA), TX, United States **August 2020 - Present**

As an Assistant Professor in the CSE department, I lead the CSS Lab, guiding a diverse team of graduate and undergraduate students in pioneering research within cyber-physical systems and network security. My role involves formulating innovative research questions, publishing scholarly papers, and securing research funding through compelling proposals. Also, I teach computer and network security as well as cloud computing classes. I contribute to professional conferences through presentations, serve on department committees, and engage with the wider academic and industry communities. Additionally, I collaborate with companies, deliver invited talks, mentor student organizations, and host outreach events for both undergraduate and high school students.

PAST APPOINTMENT

- **Lecturer**, Electrical Engineering and Computer Science Department, Howard University, Washington DC, United States **August 2019 – May 2020**

As a lecturer in the EECS department, I managed a demanding workload, teaching four classes per semester, conducted research, resulting in published papers, and actively participated in professional conferences through presentations. Also, I contributed to the department's accreditation efforts by serving on the ABET accreditation committee. Moreover, I provided guidance and mentoring to over 100 students, overseeing their course schedules and registrations.

EDUCATION

Howard University, Washington, DC

May 2019

- **Ph.D. Computer Science**
- **Concentration:** Embedded Systems Security
- **Dissertation:** Fail-Operational Intrusion Detection Systems (FO-IDS): A Mechanism for Securing Automotive In-Vehicle Networks

California State Polytechnic University, Pomona:

Dec. 2014

- **Master of Science in Electrical Engineering:** Computer Systems Emphasis

Fountain University Osogbo, Nigeria

July 2011

- **Bachelor of Science in Computer Science (with honors)**

RESEARCH INTEREST

Embedded Systems Security, Security in IoT, Explainable AI/ML, Network Security, Cloud Computing, Real-time Systems, and Connected Autonomous Vehicles.

My research mainly focused on developing methods for ensuring the security and trustworthiness of real-time embedded and distributed systems.

RESEARCH EXPERIENCE

Cyber-Physical Systems Security Lab, UT Arlington, Arlington, TX

Assistant Professor, Computer Science & Engineering

Aug. 2020 - Current

Director, CSS Lab

My research addresses critical security challenges within cyber-physical systems (CPS) and Internet of Things (IoT) devices. I specialize in satisfying the overlapping and interdependent constraints of security, safety, and speed of these domains. My research spans diverse fields, including operating systems, computer architecture, computer security, programming languages, and AI/machine learning.

I have designed and implemented experimental infrastructure and innovative security protocols tailored to various applications, such as networks in autonomous vehicles, named data networking, and IoT environments. My work delves into the core of these technologies, ensuring robust cybersecurity measures and enhancing the resilience of connected systems.

Embedded System and Security Lab, Howard University, Washington, DC

Graduate Research Assistant/Project Lead

Jan. 2016 – Aug. 2020

- **CARS - "Cars Assuring Resilient Security"**

Involved in research that explores the security issues arising out of the growing use of electrical components that creates access points to vehicular distributed systems, that a potential hacker can exploit. Inherent security challenges such as distributed denial of service attacks, impersonation and fuzzy attacks are investigated to:

- Establish theoretical foundations of fail-operational intrusion detection systems (FO-IDS),
- Explore design space in the context of defending against attacks in automotive in-vehicle networks
- Devise response and recovery protocols to ensure resilient operation, and
- Evaluate the performance of the FO-IDS using actual vehicular test beds and data.

- **Security and Data Provenance in Internet of Things (IoT)**

- This project is aimed at developing a framework that can be used to securely collect data provenance on memory constrained embedded systems device.

Oak Ridge National Lab: Research Intern

June 2017 – Aug. 2017

In-vehicle network security research and development for the in-vehicle network (CAN bus) to:

- Detect when an attack is imminent or when anomalous events occur on the vehicular bus systems.
- Investigates on ways to mitigate such anomalies and attack as they occur.
- Demonstrates injection attacks on real vehicles to take control of critical functions.
- Evaluate the performance of the proposed detection strategies and how it impedes the performance of the vehicular operations.

IBM Research Lab, Almaden: Research Intern

June 2016 – Aug. 2016

Developed a data provenance model for the Internet of Things (IoT) systems enabling:

- verification of systems correctness, integrity, and transparency of information shared across IoT platform.
- Providing mechanisms to ensure secure code and data provenance management on IoT platform.
- Investigate how provenance graphs can be used to detect anomalies in shared information on the IoT platform.

Cal Poly Pomona ECE Dept.: Graduate Research Assistant

August 2013 – Dec. 2014

- Worked on project involving creating a Smart Monitoring and Response Tool "SMART" to enable real-time energy management of a DC-based distributed micro grid.
- Studied concepts such as moving target defense, message authentication codes and AES encryption
- Created an Android application that provides a way to help people share rides and carpool that implements RSA encryption messages.

PROFESSIONAL EXPERIENCE

Synaptics: HISD Project Management Intern

June 2014 – Sept. 2014

- Provide DFT (Design for Test) feedback to design hardware and firmware team
- Design and document electrical/electronic aspects of functional test systems.
- Create test specification to ensure appropriate product test coverage.
- Work with mechanical engineering and 3rd party system builders to build mechanical fixturing and enclosures.
- Manage and report on test development project deliverables including schedule and cost.
- Create, manage and maintained the system BOMs for projects in Agile

Etisalat Nigeria (EMTS): Analyst, IT Service Desk and Incident Management

Dec. 2011 – Jan. 2013

- Served as a member of the project team that designed and delivered the SAP-e-procurement (Supplier Relationship Management, Contract Lifecycle Management, Spend Performance Management, and Master Data)
- Served as a member of O2D project team, developing strategies to ensure compliance with new industry standards for electronic exchange.
- Providing first and second level support in the event of incidents/downtimes to application and hardware.
- Design, implement, and manage network server software and hardware.

MENTORING AND SUPERVISING

Current Graduate and Undergraduate Students

- Afia Anjum, IoT Communication Network Security, PhD student, Computer Science
- Paul Agbaje, AI/ML Systems Security, PhD student, Computer Science
- Arkajyoti Mitra, CPS Security (Cybersecurity), PhD student, Computer Science
- Aqsa Yousaf, AI/ML Systems Security, PhD student, Computer Science
- Mohammad Sufyaan Saeed, Graduate student, Computer Science
- Jesse Kiprotich Chumo, Graduate student, Computer Science
- Pranali Sanjay Khose, Graduate student, Computer Science
- Mayank Vekariya, Graduate student, Computer Science
- Md. Ahanaful Alam, Undergraduate, Computer Science
- Mujaddad Fazeel, Undergraduate, Computer Science
- Kazi Md Waliul Azim, Undergraduate, Computer Science
- David Oyekola, Undergraduate, Computer Science
- Abraham Mookhoek, Undergraduate, Computer Science
- Mustafa Daher, Undergraduate, Computer Science
- Turza Saha, Undergraduate, Computer Science

Graduate Thesis and Project Committees

- Cristian Garces, Ph.D. Diagnostic Evaluation
- Aref Shiran, Ph.D. Diagnostic Evaluation
- Mohit Singhal, Ph.D. Comprehensive Examination
- Trivedi Bhaskar, Ph.D. Diagnostic Evaluation
- Amnah Abdelrahman, M.Sc. (Thesis), May 2021

Student Organization

- Faculty Advisor – National Society of Black Engineers (NSBE), UTA.

PUBLICATIONS

- **Journals**

1. Kolimago, Christopher, Michael Robson, Habeeb Olufowobi, and Ebelechukwu Nwafor. "Simulating Load Sharing for Resource Constrained Devices." *IEEE Access* (2024).
2. Agbaje, Paul, Habeeb Olufowobi, Sena Hounsinou, and Gedare Bloom. "From Weeping to Wailing: A Transitive Stealthy Bus-Off Attack." *IEEE Transactions on Intelligent Transportation Systems* (2024).
3. Anjum, Afia, Paul Agbaje, Sena Hounsinou, Nadra Guizani, and Habeeb Olufowobi. "D-NDNoT: Deterministic Named Data Networking for Time-Sensitive IoT Applications." *IEEE Internet of Things Journal* (2024).
4. Anjum, Afia, Paul Agbaje, Arkajyoti Mitra, Emmanuel Oseghale, Ebelechukwu Nwafor, and Habeeb Olufowobi. "Towards named data networking technology: Emerging applications, use cases, and challenges for secure data communication." *Future Generation Computer Systems* (2023).
5. Ikumapayi, Omolade, Habeeb Olufowobi, Jeremy Daily, Tingting Hu, Ivan Cibrario Bertolotti, and Gedare Bloom. "CANASTA: Controller Area Network Authentication Schedulability Timing Analysis." *IEEE Transactions on Vehicular Technology* (2023).
6. Agbaje, Paul, Afia Anjum, Arkajyoti Mitra, Emmanuel Oseghale, Gedare Bloom, and Habeeb Olufowobi. "Survey of Interoperability Challenges in the Internet of Vehicles." *IEEE Transactions on Intelligent Transportation Systems*.
7. Ezeobi, Uchenna, Habeeb Olufowobi, Clinton Young, Joseph Zambreno, and Gedare Bloom. "Reverse Engineering Controller Area Network Messages using Unsupervised Machine Learning." *IEEE Consumer Electronics Magazine* (2020).
8. Olufowobi, Habeeb, Young, Clinton, Zambreno, Joseph, and Bloom, Gedare. "SAIDuCANT: Specification-based Automotive Intrusion Detection using Controller Area Network (CAN) Timing." *IEEE Transactions on Vehicular Technology (TVT)* 2019.
9. Young, Clinton, Olufowobi, Habeeb, Zambreno, Joseph, and Bloom, Gedare. "Survey of Automotive Controller Area Network Intrusion Detection Systems." *IEEE Design & Test* (2019).

- **Conference and Workshop Articles**

1. Nwafor, Ebelechukwu, Ujjwal Baskota, Md Salik Parwez, Jeremy Blackstone, and Habeeb Olufowobi. "Evaluating Large Language Models for Enhanced Intrusion Detection in Internet of Things Networks." *To Appear in GLOBECOM 2024 IEEE Global Communications Conference*.
2. Uchenna Ezeobi, Sena Hounsinou, Habeeb Olufowobi, Yanyan Zhuang, and Gedare Bloom. "MCFICS: Model-based Coverage-guided Fuzzing for Industrial Control System Protocol Implementations." *To Appear in 50th Annual Conference of the IEEE Industrial Electronics Society, (IECON) 2024*
3. Ikumapayi, Omolade, Paul Agbaje, Yanyan Zhuang, Habeeb Olufowobi, and Gedare Bloom. "Deadline-Based Class Assignment for Time-Sensitive Network Frame Preemption." In *2024 IEEE International Conference on Industrial Technology (ICIT)*, pp. 1-8. IEEE, 2024
4. Agbaje, Paul, Afia Anjum, Arkajyoti Mitra, Sena Hounsinou, Ebelechukwu Nwafor, and Habeeb Olufowobi. "Privacy-Preserving Intrusion Detection System for Internet of Vehicles using Split Learning." In *Proceedings of Symposium on Vehicles Security and Privacy (VehicleSec) 2024*.
5. Paul Agbaje, Abraham Mookhoek, Afia Anjum, Arkajyoti Mitra, Mert D. Pesé, and Habeeb Olufowobi. "AutoWatch: Learning Driver Behavior with Graphs for Auto Theft Detection and Situational Awareness." In *Proceedings of the IEEE/ACM 10th International Conference on Big Data Computing, Applications and Technologies*, pp. 1-8. 2023.

6. Nwafor, Ebelechukwu, Carter Schmidt, and Habeeb Olufowobi. "IoT-MGSec: Mitigating Man-in-the-Middle Attacks in IoT Networks Using Graph-Based Learning." In *2023 International Conference on Machine Learning and Applications (ICMLA)*, pp. 1261-1266. IEEE, 2023.
7. Agbaje, Paul, Afia Anjum, Zahidur Talukder, Mohammad Islam, Ebelechukwu Nwafor, and Habeeb Olufowobi. "FedCime: An Efficient Federated Learning Approach For Clients in Mobile Edge Computing." In *2023 IEEE International Conference on Edge Computing and Communications (EDGE)*, pp. 215-220. IEEE, 2023.
8. Agbaje, Paul, Ebelechukwu Nwafor, and Habeeb Olufowobi. "Deep Reinforcement Learning for Energy-Efficient Task Offloading in Cooperative Vehicular Edge Networks." In *2023 IEEE 21st International Conference on Industrial Informatics (INDIN)*, pp. 1-8. IEEE, 2023.
9. Anjum, Afia, Sena Hounsinou, and Habeeb Olufowobi. "Work-in-Progress: Deadline-Aware Named Data Networking for Time-Sensitive IoT Applications." In *2023 IEEE 29th Real-Time and Embedded Technology and Applications Symposium (RTAS)*, pp. 353-356. IEEE, 2023.
10. Ikumapayi, Omolade, Habeeb Olufowobi, Jeremy Daily, Tingting Hu, Ivan Cibrario Bertolotti, and Gedare Bloom. "Work in Progress: Schedulability Analysis of CAN and CAN FD Authentication." In *2023 IEEE 29th Real-Time and Embedded Technology and Applications Symposium (RTAS)*, pp. 349-352. IEEE, 2023.
11. Anjum, Afia, and Habeeb Olufowobi. "Towards Mitigating Blackhole Attack in NDN-Enabled IoT." In *2023 IEEE International Conference on Consumer Electronics (ICCE)*, IEEE, 2023.
12. Nwafor, Ebelechukwu, and Habeeb Olufowobi. "CANBERT: A Language-based Intrusion Detection Model for In-vehicle Networks." In *2022 21st IEEE International Conference on Machine Learning and Applications (ICMLA)*, pp. 294-299. IEEE, 2022.
13. Anjum, Afia, and Habeeb Olufowobi. "Poster: Mitigating Blackhole Attack in NDN IoT." In *2022 IEEE Symposium on Security and Privacy*.
14. Banerjee, Vijay, Sena Hounsinou, Habeeb Olufowobi, Monowar Hasan, and Gedare Bloom. "Secure Reboots for Real-Time Cyber-Physical Systems." In *Proceedings of the 4th Workshop on CPS & IoT Security and Privacy*, pp. 27-33. 2022.
15. Agbaje, Paul, Afia Anjum, Arkajyoti Mitra, Gedare Bloom, and Habeeb Olufowobi. "A Framework for Consistent and Repeatable Controller Area Network IDS Evaluation." in *4th International Workshop on Automotive and Autonomous Vehicle Security (AutoSec)*, 2022.
16. Anjum, Afia, Paul Agbaje, Sena Hounsinou, and Habeeb Olufowobi. "In-Vehicle Network Anomaly Detection Using Extreme Gradient Boosting Machine." In *2022 11th Mediterranean Conference on Embedded Computing (MECO)*, pp. 1-6. IEEE, 2022.
17. Hounsinou, Sena, Mark Stidd, Uchenna Ezeobi, Habeeb Olufowobi, Mitra Nasri, and Gedare Bloom. "Vulnerability of Controller Area Network to Schedule-Based Attacks." In *2021 IEEE Real-Time Systems Symposium (RTSS)*, pp. 495-507. IEEE, 2021.
18. Nwafor, Ebelechukwu, Michael Robson, and Habeeb Olufowobi. "Dynamic Load Sharing in Memory Constrained Devices: A Survey." *2021 IEEE 7th World Forum on Internet of Things (WF-IoT)*. IEEE, 2021.
19. Ebelechukwu Nwafor and Olufowobi, Habeeb. "Towards an Interactive Visualization Framework for IoT Device Data Flow." *IEEE Workshop on Internet of Things Data Analytics (IoTDA) 2019*.
20. Olufowobi, Habeeb, Sena Hounsinou and Bloom, Gedare. "Controller Area Network Intrusion Prevention System Leveraging Fault Recovery." *ACM Workshop on Cyber-Physical Systems Security & Privacy (CPS-SPC'19)*.
21. Olufowobi, Habeeb, Ezeobi, Uchenna, Muhati, Eric, Young, Clinton, Zambreno, Joseph, and Bloom, Gedare. "Anomaly Detection Approach Using Adaptive Cumulative Sum Algorithm for Controller Area Network". *Proceedings of the ACM Workshop on Automotive Cybersecurity. ACM, 2019*.

22. Young, Clinton, Olufowobi, Habeeb, Zambreno, Joseph, and Bloom, Gedare. "Automotive Intrusion Detection Based on Constant CAN Message Frequencies Across Vehicle Driving Modes". *Proceedings of the ACM Workshop on Automotive Cybersecurity. ACM, 2019.*
 23. Olufowobi, Habeeb, Young, Clinton, Zambreno, Joseph, and Bloom, Gedare. "WiP: Real-Time Modeling for Intrusion Detection in Automotive Controller Area Network." *Real-Time Systems Symposium (RTSS), 2018 IEEE. IEEE, 2018.*
 24. Parwez, Md Salik, and Olufowobi, Habeeb. "Cost-constrained Handoff in Next Generation Heterogeneous Wireless Networks". *Ubiquitous Computing, Electronics and Mobile Communication Conference (UEMCON), 2018 IEEE 9th Annual. IEEE.*
 25. Olufowobi, Habeeb, Engel, Robert, Baracaldo, Nathalie, Bathen, Luis Angel D., Tata, Samir, and Ludwig, Heiko. "Data Provenance Model for Internet of Things (IoT) Systems." *International Conference on Service-Oriented Computing. Springer, Cham, 2016.*
- **Book Chapter**
Olufowobi, Habeeb and Gedare Bloom. "Connected Cars: Automotive Cybersecurity and Privacy for Smart Cities." In *Smart Cities Cybersecurity and Privacy*, pp. 227-240. Elsevier, 2019.
 - **Short Papers**

Anjum, Afia, and Habeeb Olufowobi. "Poster: Mitigating Blackhole Attack in NDN0T." In Proceeding of the 43rd IEEE Symposium on Security and Privacy (S&P), 2022.

TEACHING EXPERIENCE

- **University of Texas at Arlington**
 - Fall 2024
 - CSE 4342/5342/6351 Embedded Systems II
 - Spring 2022, 2023
 - CSE 5388/6388 Computer Network Security (New course developed)
 - Spring 2024
 - CSE 4380 Information Security
 - Spring 2021
 - CSE 4344/5344 Computer Network
 - Fall 2020, 2021, 2022, 2023, 2024
 - CSE 5333/4392 Cloud Computing
- **UNCF HBCU CS Academy**
 - Summer 2020
 - Data Structures and Algorithms
- **Howard University, Washington, DC**
 - Spring 2020
 - CSCI 136 Computer Science II – Intro to Data Structures & Algorithm
 - CSCI 354 Computer Science III - Data structures & algorithms
 - Fall 2019
 - CSCI 365 Cloud Computing

- CSCI 354 Computer Science III - Data structures & algorithms
 - Spring 2018
 - EECE 156 Math I Laboratory
 - Fall 2017 - **Teaching Assistant**
 - Operating Systems Concept
 - Computer Organization I, II
 - Spring 2016 - **Teaching Assistant**
 - Computer Organization I, II
 - Fall 2016 - **Teaching Assistant**
 - Modelling and Simulation
- **California State Polytechnic University, Pomona - Teaching Assistant**
 - Spring 2014
 - Electromagnetic Fields
 - Winter 2014
 - Software Engineering

Workshop and Conference Participant

- AI for Health Equity Symposium AIM-AHEAD Annual Meeting (AIHES 2024)
- Symposium on Vehicle Security and Privacy (VehicleSec 2024)
- Cyber-Physical Systems and Internet-of-Things Week (CPS-IoT Week), San Antonio TX, 2023
- NSF/SaTC Aspiring PI Workshop, Washington DC, 2023
- NSF CISE CAREER Workshop, Virtual, April 2023
- International Conference on Consumer Electronics (ICCE), Las Vegas NV, 2023
- Accelerating Innovation and Transition with DARPA Regional Workshop, RELLIS Campus, Bryan TX, 2022
- CRA Career Mentoring Workshop, Washington DC, Feb. 2022
- NSF Cyber-Physical Systems (CPS) Principal Investigator Meeting, Alexandria, VA, November 2019
- Automotive and Autonomous Vehicle Security Workshop (*AutoSec*), Richardson, TX, 2019
- Anomaly Detection Approach Using Adaptive Cumulative Sum Algorithm for Controller Area Network, *AutoSec*, Richardson, TX, 2019
- Annual Ubiquitous Computing, Electronic & Mobile Communication Conference (*UEMCON*), New York, NY, 2018
- IEEE Real-Time Systems Symposium (RTSS), Nashville, TN, 2018
- Cyber-Physical Systems Week (CPS Week), Pittsburg, PA, 2017
- IEEE Secure Development Conference (SecDev), Boston, MA 2016

INVITED TALKS

- **Toyota Connected, Dallas.** Intrusion Detection and Prevention System for Ground Vehicles. Oct. 27, 2022

- **ISACA North Texas Annual Meeting.** Remote Compromise of Automotive Communication Network. March 25, 2022
- **Fountain University, Osogbo Nigeria.** Securing Vehicle-to-Vehicle Communications. August 3, 2021
- **Bell Flight, Fort Worth.** Security of Ground and Urban Air Mobility Communication. Sept. 25, 2020
- **Florida A&M University Thought Leaders Series.** Autonomous Security. April 10, 2020
- **University of Nevada Las Vegas.** Automotive Intrusion Detection using CAN Timing. May 15, 2019
- **Fairleigh Dickinson University Teaneck.** Provenance Model in IoT System. March 13, 2019

PRESENTATIONS

- Improving Health Equity in Algorithmic Decision-Making Using Explainable AI (AIHES 2024)
- XAI and Interpretability in Algorithm Decision Making - Understanding the Black Box (VADSTI 2024)
- Towards Mitigating Blackhole Attack in NDN-Enabled IoT, ICCE, Las Vegas, 2023
- Automotive Intrusion Detection Based on Constant CAN Message Frequencies Across Vehicle Driving Modes, AutoSec, Richardson, TX, 2019
- Anomaly Detection Approach Using Adaptive Cumulative Sum Algorithm for Controller Area Network, AutoSec, Richardson, TX, 2019
- Cost-constrained Handoff in Next Generation Heterogeneous Wireless Networks, UEMCON, New York, NY, 2018
- Real-Time Modeling for Intrusion Detection in Automotive Controller Area Network, RTSS, Nashville, TN, 2018
- Data Provenance Model for Internet of Things Systems, IBM Almaden Research Center, August, Almaden, CA 2016
- Secure Data Provenance for Internet of Things Devices (IoT), HU Research Week, April 2016

AWARDS AND GRANTS

- **Grants Award**
 - AIM-AHEAD AI/ML in Biomedical Research and Clinical Practice That Embodies Ethics and Equity 2024 (ABC-EE) (**#250,000**)
- **Awards**
 - AIM-AHEAD Research Fellowship Award, 2023
 - Best Paper Award, 4th International Workshop on Automotive and Autonomous Vehicle Security, 2022
 - HBCU Blockchain Course Development Proposal Award, 2019
 - Real-Time System Symposium Travel Award, 2018
 - Trans-Atlantic Symposium on Technology and Policy Travel Award, 2017
 - CPS Week Student Travel Award, Carnegie Melon University 2017
 - IEEE Security Development Conference Travel Award, 2016
 - Dean's List – California State Polytechnic University, Pomona, 2014
 - Chancellor's Prize - Best Graduating Student in the University, Fountain University, 2011
 - College Prize - Best Graduating Student in Sciences, Fountain University, 2011

- Fountain University Scholar Award, in recognition of excellence in academic performance, 2008 – 2011

CERTIFICATIONS

- **PMI Project Management Professional (PMP)**
- **ITIL, SSYB and SFC Certified**

PROFESSIONAL SERVICE

- **Web Chair:** VehicleSec'24
- **Reviewer:** IEEE Transaction on Vehicular Technology
- **Reviewer:** IEEE Internet of Things Journal
- **Reviewer:** IEEE Transaction on Computers
- **Reviewer:** ACM SIGCSE
- **Reviewer:** Elsevier Computers and Security
- **TPC – Real Time System Symposium (RTSS 2021, 2022, 2023)**
- **TPC – IEEE/ACM International Conference on Utility and Cloud Computing (UCC 2022, 2023)**
- **Artifacts Evaluation Committee – Real Time System Symposium (RTSS 2021, 2022, 2023)**
- **TPC - CPS & IoT Security and Privacy (CPSIoTSec 2020, 2021)**
- **TPC - International Conference on Computer Communication and the Internet (ICCCI 2022)**
- **Secondary Reviewer:** Design, Automation and Test Conference (DATE 2022)

PROFESSIONAL MEMBERSHIPS

- IEEE Member (M'16)
- IEEE Computer Society, Member
- IEEE Communication Society, Member
- Member NSBE and Faculty Advisor NSBE UTA

INSTITUTIONAL SERVICE

- Member CSE Broadening Participation Committee
- Member CSE Faculty Search Committee
- Member CSE PhD Admissions Committee