Suman Bhunia

✉ bhunias@miamioh.edu
www.sbhunia.me

Professional Experience

2020–current	**Assistant Professor**, *Department of Computer Science and Software Engineering*. Miami University, Oxford, Ohio USA
2018–2020	**Postdoctoral Researcher**, *Dept. of Computer Science and Engineering*. Texas A&M University, College Station, USA
2017–2018	**Postdoctoral Scholar**, *Department of Computer Science*. University of California, Davis, USA
2013–2017	**Graduate Research Assistant & Instructor**, *Department of Computer Science and Engineering*. University of Nevada, Reno, USA
2011–2013	**Graduate Research Assistant & Adjunct Lecturer**, *Department of Computer Science*. City University of New York, New York, USA
2010–2011	**Senior Research Fellow**, *Department of Electronics and Telecommunication Engineering*. Jadavpur University, Kolkata, India

Education

2013–2017	**Ph.D. in Computer Science**, *University of Nevada, Reno, USA*, *Thesis:* Defense Against Intelligent Attacker in Cognitive Radio Networks, GPA:4.0/4.0. Committee: Shamik Sengupta, Murat Yuksel, Mehmet Gunes, Sergiu Dascalu, Sankar Mukhopadhyay
2008–2010	**Masters of Technology in Distributed and Mobile Computing**, *Jadavpur University, Kolkata, India*, *Thesis:* Performance Evaluation of WiMAX Network in Aspect of Modulation and Coding Schemes and Hand-off using OPNET, GPA:8.39/10. Committee: Dr. Iti Saha Misra and Dr. Salil K. Sanyal
2004–2008	**Bachelor of Technology in Electronics and Communication Engineering**, *West Bengal University of Technology*, Kolkata, India, GPA:8.36/10.

Awards and Fellowships

2018	Paper entitled "R-Drive: Resilient Data Storage and Sharing for Mobile Edge Clouds" won the best paper award at IEEE International Conference on Mobile AdHoc and Smart Systems (MASS), 2022, Denver, USA
2018	Outstanding Thesis award from the Department of Computer Science, UNR
2017	Outstanding Graduating Graduate Student, UNR (Awarded only one student in the University)
2016	Outstanding graduate student of Department of Computer Science, UNR
2011–2013	Two year City University of New york science fellowship
2010	Paper entitled "Study of OPNET and performance evaluation of WiMAX network under various terrain conditions in OPNET" won the best student paper award at the National Conference on Microwave and Communication NCMicroCom-2010
2008–2010	Two year full scholarship for M.Tech programme for qualifying Graduate Aptitude Test in Engineering, GATE (All-India basis)

Research Interest

Security — Network security, malicious node sensing/detection, cyber-physical security, wireless honeypot, jamming attack, spectrum fingerprinting, IoT Security

Wireless — 6G, Cognitive radio, dynamic spectrum access (DSA), cross-layer optimization, ad hoc, unmanned autonomous systems (UAS)

Networking — QoS and resource management, Distributed Edge Computing, end-to-end performance, testbed implementation

Courses Taught

CSE 470/570 — Ethical Hacking (at MU)

CSE 467/567 — Computer and Network Security (at MU)

CSE 274 — Data Abstraction and Data Structures (at MU)

CSE 271 — Object-Oriented Programming using Java (at MU)

CS 446/646 — Principles of Computer Operating Systems, (at UNR)

CS 201 — Digital Design Laboratory (at UNR)

CS 332 — Operating System Laboratory (at CUNY)

CS 102 — Introduction to Programming (at CUNY)

Patent Invention Disclosure

[1] M. R. Khan, M. Yuksel, S. Bhunia, and S. Sengupta, *In-Band Line-of-Sight Discovery for Directional Full-Duplex Transceivers*, U.S. Provisional Patent Application 62/338,953

Peer Reviewed Publications

§ indicates graduate student under direct supervision.

† indicates undergraduate student.

Journals

[1] X. Lai, H. Jiang, S. Bhunia, and H. Tran†, "Reducing Latency in MEC Networks with Short-packet Communications," *IEEE Transactions on Vehicular Technology*, 2023, (Impact Factor: 6.8).

[2] A. Altaweel, R. Stoleru, G. Gu, A. K. Maity, and S. Bhunia, "On Detecting Route Hijacking Attack in Opportunistic Mobile Networks," *IEEE Transactions on Dependable and Secure Computing*, vol. 20, no. 3, pp. 2516–2532, 2022, (Impact Factor: 7.3).

[3] A. Altaweel, C. Yang, R. Stoleru, S. Bhunia, M. Sagor, M. Maurice, and R. Blalock, "RSock: A resilient routing protocol for mobile Fog/Edge networks," *Ad Hoc Networks*, vol. 134, p. 102926, 2022, (Impact Factor: 4.8).

[4] S. Bhunia, M. Khan, M. Yuksel, and S. Sengupta, "In-band LOS discovery using highly directional transceivers," *Ad Hoc Networks*, vol. 91, p. 101875, 2019, (Impact Factor: 4.8).

[5] M. Khan, S. Bhunia, M. Yuksel, and L. Kane, "Line-of-Sight Discovery in 3D Using Highly Directional Transceivers," *IEEE Transactions on Mobile Computing*, vol. 18, no. 12, pp. 2885–2898, 2019, (Impact Factor: 6.1).

[6] S. Bhunia, E. Miles, S. Sengupta, and F. Vazquez-Abad, "CR-Honeynet: A Cognitive Radio Learning and Decoy Based Sustenance Mechanism to Avoid Intelligent Jammer," *IEEE*

Transactions on Cognitive Communications and Networking, vol. 4, no. 3, pp. 567–581, 2018, (Impact Factor: 6.4).

[7] S. Bhunia, P. A. Regis, and S. Sengupta, "Distributed Adaptive Beam Nulling to Survive Against Jamming in 3D UAV Mesh Networks," *Elsevier Computer Networks*, vol. 137, pp. 83–97, 2018, (Impact Factor: 5.5).

[8] S. Mneimneh, S. Bhunia, S. Sengupta, and F. Vazquez-Abad, "A game-theoretic and stochastic survivability mechanism against induced attacks in cognitive radio networks," *Elsevier Pervasive and Mobile Computing*, vol. 40, pp. 577–592, 2017, (Impact Factor: 3.8).

[9] S. Bhunia, V. Behzadan, P. A. Regis, and S. Sengupta, "Adaptive Beam Nulling in Multihop Ad hoc Networks Against a Jammer in Motion," *Elsevier Computer Networks*, vol. 109, pp. 50 – 66, 2016, special issue on Recent Advances in Physical-Layer Security (Impact Factor: 3.0).

[10] S. Bhunia, S. Sengupta, and F. Vázquez-Abad, "Performance Analysis of CR-honeynet to Prevent Jamming Attack Through Stochastic Modeling," *Elsevier Pervasive and Mobile Computing*, vol. 21, pp. 133–149, 2015, (Impact Factor: 3.8).

[11] T. Chakraborty, A. Mukhopadhyay, S. Bhunia, I. Misra, and S. Sanyal, "An Optimization Technique for Improved VoIP Performance over Wireless LAN," *Journal of Networks*, vol. 7, no. 3, pp. 480–493, 2012, (Impact Factor: 1.2).

[12] S. Bhunia, I. Misra, S. Sanyal, and A. Kundu, "Performance study of mobile WiMAX network with changing scenarios under different modulation and coding," *Wiley International Journal of Communication Systems*, vol. 24, no. 8, pp. 1087–1104, 2011, (Impact Factor: 1.9).

[13] A. Kundu, I. Misra, S. Sanyal, and S. Bhunia, "VoIP performance over broadband wireless networks under static and mobile environments," *International Journal of Wireless & Mobile Networks (IJWMN) Vol*, vol. 2, no. 4, 2010, (20 citations).

Conference Proceedings

[1] A. Carvalho, L. Zavolokina, S. Bhunia, M. Chaudhary[§], and N. Yoganathan, "Promoting Inclusiveness and Fairness through NFTs: The Case of Student-Athletes and NILs," in *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*, Hamburg, Germany, 2023, pp. 1–9, (acceptance rate=NA).

[2] N. Hoang[†], P. Devabhakthini, R. M. Shukla, and S. Bhunia, "Network Coverage Improvement during Natural Disaster using Self-Organizing Maps," in *2023 3rd International Conference on Electrical, Computer, Communications and Mechatronics Engineering (ICECCME)*. Tenerife, Spain: IEEE, 2023, pp. 1–6, (acceptance rate=NA).

[3] J. Beerman[†], D. Berent[†], Z. Falter[†], and S. Bhunia, "A Review of Colonial Pipeline Ransomware Attack," in *2023 IEEE/ACM 23rd International Symposium on Cluster, Cloud and Internet Computing Workshops (CCGridW)*. IEEE, 2023, pp. 8–15, (acceptance rate=NA).

[4] N. Perry[§]and S. Bhunia, "Crossfire Attack Detection in 6G Networks with the Internet of Things (IoT)," in *IFIP International Internet Of Things (IFIP-IoT)*, Dallas, USA, Nov. 2023, (acceptance rate=NA).

[5] P. Jamieson, S. Bhunia, and D. M. Rao, "With ChatGPT, do we have to rewrite our learning objectives-CASE study in Cybersecurity," in *IEEE Frontiers in Education Conference (FIE)*, College Station, TX, Oct. 2023, (acceptance rate=88%).

[6] S. Bhunia, R. Stoleru, A. Haroon, M. Sagor, A. Altaweel, M. Chao, M. K. Maurice, and R. Blalock, "EdgeKeeper: Resilient and Lightweight Coordination for Mobile Edge Clouds," in *2022 IEEE 19th International Conference on Mobile Ad Hoc and Smart Systems (MASS) (IEEE MASS 2022)*, Denver, USA, Oct. 2022, (acceptance rate=29.5%).

[7] M. Sagor, R. Stoleru, A. Haroon, S. Bhunia, M. Chao, A. Altaweel, M. K. Maurice, and R. Blalock, "R-Drive: Resilient Data Storage and Sharing for Mobile Edge Clouds," in *2022 IEEE 19th International Conference on Mobile Ad Hoc and Smart Systems (MASS) (IEEE MASS 2022)*, Denver, USA, Oct. 2022, (acceptance rate=29.5%), **Won Best Paper Award**.

[8] A. Prentosito[†], M. Skoczen[†], L. Kahrs[†], and S. Bhunia, "Case Study on a Session Hijacking Attack: The 2021 CVS Health Data Breach," in *Mobile Web and Intelligent Information Systems (MobiWis)*, 2022, pp. 93–105, (acceptance rate=35%).

[9] J. Qian[†], Z. Gan[†], J. Zhang[†], and S. Bhunia, "Analyzing SocialArks Data Leak-A Brute Force Web Login Attack," in *2022 4th International Conference on Computer Communication and the Internet (ICCCI)*.   IEEE, 2022, pp. 21–27, (acceptance rate=50.7%).

[10] J. Nadjar[†], Y. Liu[†], J. Salinas[†], and S. Bhunia, "A Case Study on the Multi-Vector Data Breach on Astoria," in *2022 4th International Conference on Computer Communication and the Internet (ICCCI)*.   IEEE, 2022, pp. 51–57, (acceptance rate=50.7%).

[11] L. Rizkallah[†], N. Potter[†], K. Reed[†], D. Reynolds[†], M. Salman, and S. Bhunia, "Red toad, blue toad, hacked toad?" in *2022 IEEE World AI IoT Congress (AIIoT)*.   IEEE, 2022, pp. 379–386, (acceptance rate=41.3%).

[12] C. Faircloth[†], G. Hartzell[†], N. Callahan[†], and S. Bhunia, "A study on brute force attack on t-mobile leading to sim-hijacking and identity-theft," in *2022 IEEE World AI IoT Congress (AIIoT)*.   IEEE, 2022, pp. 501–507, (acceptance rate=41.3%).

[13] D. Redding[†], J. Ang[†], and S. Bhunia, "A case study of massive API scrapping: Parler data breach after the capitol riot," in *7th International Conference on Smart and Sustainable Technologies 2022 (SpliTech 2022)*, Split, Bol, Croatia, Jul. 2022, (acceptance rate=48%).

[14] A. M. Pitney[†], S. Penrod[†], M. Foraker[†], and S. Bhunia, "A systematic review of 2021 microsoft exchange data breach exploiting multiple vulnerabilities," in *7th International Conference on Smart and Sustainable Technologies 2022 (SpliTech 2022)*, Split, Bol, Croatia, Jul. 2022, (acceptance rate=48%).

[15] K. Kiesel[†], T. G. Deep[†], A. Flaherty[†], and S. Bhunia, "Analyzing Multi-Vector ransomware attack on accellion file transfer appliance server," in *7th International Conference on Smart and Sustainable Technologies 2022 (SpliTech 2022)*, Split, Bol, Croatia, Jul. 2022, (acceptance rate=48%).

[16] E. Caroscio[†], J. Paul[†], J. Murray[†], and S. Bhunia, "Analyzing the Ransomware Attack on DC Metropolitan Police Department by Babuk," in *IEEE International Systems Conference (SysCon)*, 2022, (acceptance rate=67.1%).

[17] J. Vazquez-Estrada[§], S. Bhunia, M. Khan, Y. Qian[†], and N. T. Huu[†], "Neighbor Discovery in a LoRa Assisted Multi-Transceiver Free-Space-Optical Network," in *IEEE Wireless Communications and Networking Conference (WCNC)*, 2022.

[18] P. A. Regis, S. Bhunia, A. N. Patra, and S. Sengupta, "Deep-learning assisted Cross-Layer Routing in Multi-hop Wireless Network," in *2021 IEEE 7th World Forum on Internet of Things (WF-IoT)*.   IEEE, 2021, pp. 35–39.

[19] L. Sterle[†]and S. Bhunia, "On SolarWinds Orion Platform Security Breach," in *2021 IEEE SmartWorld, Ubiquitous Intelligence & Computing, Advanced & Trusted Computing, Scalable Computing & Communications, Internet of People and Smart City Innovation (SmartWorld/SCALCOM/UIC/ATC/IOP/SCI)*.   IEEE, 2021, pp. 636–641.

[20] B. Gibson[†], S. Townes[†], D. Lewis[†], and S. Bhunia, "Vulnerability in massive api scraping: 2021 linkedin data breach," in *2021 International Conference on Computational Science and Computational Intelligence (CSCI)*.   IEEE, 2021, pp. 777–782, (acceptance rate=24%).

[21] J. Huddleston[†], P. Ji[†], S. Bhunia, and J. Cogan[†], "How VMware Exploits Contributed to SolarWinds Supply-chain Attack," in *2021 International Conference on Computational Science and Computational Intelligence (CSCI)*.   IEEE, 2021, pp. 760–765, (acceptance rate=24%).

[22] M. H. N. Ba[†], J. Bennett[†], M. Gallagher[†], and S. Bhunia, "A case study of credential stuffing attack: Canva data breach," in *2021 International Conference on Computational Science and Computational Intelligence (CSCI)*.   IEEE, 2021, pp. 735–740, (acceptance rate=24%).

[23] J. Rudie[†], Z. Katz[†], S. Kuhbander[†], and S. Bhunia, "Technical analysis of the nso group's pegasus spyware," in *2021 International Conference on Computational Science and Computational Intelligence (CSCI)*.   IEEE, 2021, pp. 747–752, (acceptance rate=24%).

[24] A. Murthy, C. Green, R. Stoleru, S. Bhunia, C. Swanson, and T. Chaspari, "Machine learning-based irrigation control optimization," in *International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation (ACM BuildSys)*, 2019, pp. 213–222.

[25] S. Bhunia and S. Sengupta, "Implementation of Interface Agility for Duplex Dynamic Spectrum Access Radio Using USRP," in *Military Communications Conference (MILCOM)*. doi: 10.1109/MILCOM.2017.8170844, 2017, pp. 762–767.

[26] S. Bhunia and S. Sengupt, "Distributed Adaptive Beam Nulling to Mitigate Jamming in 3D UAV Mesh Networks," in *2017 International Conference on Computing, Networking and Communications (ICNC)*.   IEEE, 2017, (acceptance rate 29%).

[27] P. A. Regis, S. Bhunia, and S. Sengupta, "Enhancing Performance and Longevity of Multi-radio Multi-channel HetNets through Dynamic Path-assignment," in *2017 International Conference on Computing, Networking and Communications (ICNC)*.   IEEE, 2017, (acceptance rate 29%).

[28] S. Bhunia, M. Khan, S. Sengupta, and M. Yuksel, "LOS Discovery for Highly Directional Full Duplex RF/FSO Transceivers," in *Military Communications Conference (MILCOM)*, 2016.

[29] M. Khan, S. Bhunia, M. Yuksel, and S. Sengupta, "LOS Discovery in 3D for Highly Directional Transceivers," in *Military Communications Conference (MILCOM)*, 2016.

[30] P. A. Regis, S. Bhunia, and S. Sengupta, "Implementation of 3D Obstacle Compliant Mobility Models for UAV Networks in Ns-3," in *Proceedings of the Workshop on Ns-3*, ser. WNS3 '16, 2016, pp. 124–131.

[31] S. Bhunia, V. Behzadan, and S. Sengupta, "Enhancement of spectrum utilization in non-contiguous DSA with online defragmentation," in *Military Communications Conference, MILCOM*.   IEEE, 2015, pp. 432–437.

[32] S. Bhunia, V. Behzadan, P. Regis, and S. Sengupta, "Performance of Adaptive Beam Nulling in Multihop Ad-Hoc Networks under Jamming," in *High Performance Computing and*

Communications (HPCC), 2015 IEEE 7th International Symposium on Cyberspace Safety and Security (CSS), 2015 IEEE 12th International Conferen on Embedded Software and Systems (ICESS), 2015 IEEE 17th International Conference on*. IEEE, 2015, pp. 1236–1241, (acceptance rate=30%).

[33] S. Bhunia, S. Sengupta, and F. Vazquez-Abad, "CR-Honeynet: A Learning & Decoy Based Sustenance Mechanism against Jamming Attack in CRN," in *Military Communications Conference (MILCOM), 2014 IEEE*. IEEE, 2014, pp. 1173–1180, (7 citations).

[34] S. Bhunia, X. Su, S. Sengupta, and F. Vázquez-Abad, "Stochastic model for Cognitive Radio Networks under jamming attacks and honeypot-based prevention," in 15th *International Conference on Distributed Computing and Networking (ICDCN)*. Springer, Jan 2014, (10 citations).

[35] S. Das, S. Barman, and S. Bhunia, "Performance Analysis of IEEE 802.11 Rate Adaptation Algorithms Categorized Under Rate Controlling Parameters," in *Proceedings of the 2014 International Conference on Information and Communication Technology for Competitive Strategies*. ACM, 2014, p. 8.

[36] S. Bhunia and S. Sengupta, "Feasibility of channel hopping in jamming attack," *IEEE TCSIM Newsletter*, no. 19, pp. 2–5, 2013.

[37] E. Troja, K. Ezirim, and S. Bhunia, "Route aware dynamic channel scheduling and selection for multi-hop cognitive radio networks," in *IEEE 78th Vehicular Technology Conference, VTC 2013-Fall*. IEEE, 2-5 September 2013.

[38] A. Mukhopadhyay, T. Chakraborty, S. Bhunia, I. Misra, and S. Sanyal, "Study of enhanced voip performance under congested wireless network scenarios," in *International Conference on Communication Systems and Networks (COMSNETS)*. IEEE, 2011, (9 citations).

[39] T. Chakraborty, A. Mukhopadhyay, S. Bhunia, I. Misra, and S. Sanyal, "Analysis and enhancement of qos in cognitive radio network for efficient voip performance," in *World Congress on Information and Communication Technologies (WICT)*. IEEE, 2011.

[40] A. Mukhopadhyay, T. Chakraborty, S. Bhunia, I. Misra, and S. Sanyal, "An adaptive jitter buffer playout algorithm for enhanced voip performance," in *International Conference on Advances in Computing and Information Technology (ACITY)*. Springer, 2011.

[41] T. Chakraborty, A. Mukhopadhyay, S. Bhunia, I. Misra, and S. Sanyal, "Optimizing voip call in diverse network scenarios using state-space search technique," in *International Conference on Advances in Computing and Information Technology (ACITY)*. Springer, 2011, pp. 231–242.

[42] A. Kundu, S. Bhunia, I. Misra, and S. Sanyal, "Comparison of voip performance over wimax, wlan and wimax-wlan integrated network using opnet," in *International Conference on Wireless and Mobile Networks*. Springer, 2010.

[43] S. Bhunia, A. Kundu, I. Misra, and S. Sanyal, "Reducing hand-off latency in wimax network using cross layer information," in *International Conference on Advances in Computer Engineering (ACE)*. IEEE, 2010, pp. 346–348.

Short Papers and Posters

[1] S. Bhunia, R. Stoleru, A. Haroon, M. Sagor, A. Altaweel, M. Chao, M. Maurice, and R. Blalock, "Poster: Edgekeeper–resilient and lightweight coordination for mobile edge

computing systems," in *20th ACM International Conference on Mobile Systems, Applications, and Services (ACM MobiSys)*, 2022.

[2] J. Vazquez-Estrada[§], S. Bhunia, M. Khan, Y. Qian[†], and N. T. Huu[†], "Neighbor discovery in a multi-transceiver free-space-optical ad hoc network," in *2022 IEEE 19th Annual Consumer Communications & Networking Conference (CCNC)*.   IEEE, 2022, pp. 509–510.

Research Grant Proposal Preparation

TAMU   Prepared a part of the proposal, "Deploying Defenses for Cellular Networks Using the AWARE Testbed", submitted to DHS in 2019

TAMU   Prepared a part of the proposal, "DAAR: Drone-Augmented Augmented Reality for Cyber-Human Physical Systems", submitted to NSF CPS in 2019

UC Davis   Prepared a part of the proposal, "Building Low-Power Wide Area Networking Systems for Smart City IoT Applications", submitted to NSF ICE-T in 2018

Student Advisement

Masters Thesis Supervisor

2023- 2024   **Pratiksha Shrestha**, *M.S. in Computer Science*, Miami University.
Topic: Privacy preserving peer-review reward system using Blockchain and Zero Knoledge Proof.

2022- 2024   **Owen Campbell**, *M.S. in Computer Science*, Miami University.
Topic: Blockchain based auction system for resource hiring in Medical field.

2022–2023   **Jesica Vasquez**, *M.S. in Computer Science*, Miami University.
Topic: Secure Neighbor Discovery Protocol for Free Space Optical Communication Netowrk

2022–2023   **Nick Perry**, *M.S. in Computer Science*, Miami University.
Thesis: Neural Network-Based Crossfire Attack Detection in SDN-Enabled Cellular Networks

2021–2023   **Monu Chaudhary**, *M.S. in Computer Science*, Miami University.
Thesis: Fairness in NIL-based NFT Marketplace

2020–2022   **Angela Famera**, *M.S. in Computer Science*, Miami University.
Thesis: Cross-Device Federated Intrusion Detector for Early Stage Botnet Propagation

Thesis Reading and Committee Membership

2023   **Jacob James Krzciok**, *M.S. in Computer Science*, MU, Advisor: Dr. K. Bibak.
Topic: Social Cybersecurity for IoT and Related Generalizations

2023   **Nathan Callahan**, *M.S. in Computer Science*, MU, Advisor: Dr. J. Femiani.
Topic: Improving Automatic Modulation Detection Across a Range of Signal to Noise Levels

2022   **Kareem Ghumrawi** , *M.S. in Computer Science*, MU, Advisor: Dr. P. J. Giabbanelli.
Thesis: Applying and Accelerating Large-Scale Population Simulations

2021   **Haoxiang Yu**, *M.S. in Computer Science*, MU, Advisor: Dr. V Raychoudhury.
Thesis: A Comprehensive System for Dynamic and Distributed Taxi Ride-Sharing Via Localized Communication

2021   **John Myerly Hata**, *M.S. in Computer Science*, MU, Advisor: Dr. V Raychoudhury.
Thesis: Computational Evacuation Models for Populations with Heterogeneous Mobility Requirements

2021   **Robert Peter Ritchie** , *M.S. in Computer Science*, MU, Advisor: Dr. K. Bibak.
Thesis: Efficient Constructions for Deterministic Parallel Random Number Generators and Quantum Key Distribution

Undergrad Student Researcher

2021–2022   Sam Kuhbander

2022–2022	Daniel Cruz
2020–2021	Sara Grimes
2020–2021	Nam Hoang
2021–2011	Huy Nguyen
2020–2021	Yicheng Qian
2020–2021	Ryan Schuerkamp
2020–2021	Tom Deep

Senior Capstone projects

2023–2024	Catch the Flag Competition Platform Building
2022–2023	Close bid Auction using Blockchain for Ambulance Hiring
2022–2023	Peer to Peer Review System using Blockchain
2021–2022	Blockchain based First Responder Application
2020–2021	Distributed Storage for First Responders Network
2020–2021	Digital Triage Management Application

Academic and Professional Services

Session Chair at International Conferences

2022	19th IEEEAnnual Consumer Communications & Networking Conference (CCNC 2022), Las Vegas, USA, session: "WiP5: Autonomous vehicles"
2015	International Symposium on Cyberspace Safety and Security (IEEE CSS) 2015, New York, USA. Track - Active Defense Techniques and Systems

Member of Technical Program Committee

CCNC	IEEE Consumer Communications & Networking Conference – 2021, 2022
ICDCN	International Conference on Distributed Computing and Networking – 2022
MILCOM	Military Communications Conference – 2017, 2018, 2019, 2021, 2022, 2023
ASONAM	Advances in Social Networks Analysis and Mining – 2021
MASS	IEEE International Conference on Mobile Ad-Hoc and Smart Systems – 2020
GameSec	Conference on Decision and Game Theory for Security – 2017
ICIT	International Conference on Information Technology – 2015, 2016

Selected Journal/Conference Reviewer

Journals	Computer Communications (Elsevier), Physical Communication (Elsevier), Pervasive and Mobile Computing (Elsevier), Future Generation Computer Systems (Elsevier), International Journal of Communication Systems (Wiley), Wireless Communications and Mobile Computing (Wiley), International Journal of Distributed Sensor Networks (Hindawi)
Conferences	IEEE INFOCOM, IEEE Globecom, IEEE ICC, IEEE MILCOM, ISCIT, IEEE WoWMoM

Leadership and Committee Experience

2021–present	Advisor to Miami University Cybersecurity Club. Formed with students from my classes.
2021–present	Member of Cybersecurity Committee at the department of CSE.
2014-2017	Elected thrice as a college of engineering representative at UNR Graduate Student Association.
2015-2017	Elected twice as the chair of the clubs and organizations committee of UNR GSA
2014-2017	Serving budget committee of UNR GSA

2014-2017 Serving judicial committee of UNR GSA

2014-2015 Founding vice president of Computer Science Graduate Student Club, UNR

2013-2015 Elected twice as the vice president of Indian Student Organization, UNR

Professional Membership

IEEE Senior Member since 2021, Member since 2010

ACM Member since 2021

References

PhD Advisor **Dr. Shamik Sengupta**, *Ralph E.& Rose A. Hoeper Professor and Executive Director of UNR Cybersecurity Center*, Department of Computer Science and Engineering, University of Nevada, Reno. `http://www.cse.unr.edu/~shamik/`.
Email: ssengupta@unr.edu, Tel: (775) 784-6953

Thesis Committee Member **Dr. Murat Yuksel**, *Associate Professor*, Department of Electrical and Computer Engineering, University of Central Florida (UCF), `http://www.ece.ucf.edu/~yuksem/`.
Email: murat.yuksel@ucf.edu, Tel: (407) 823-4181

Department Chair **Dr. Eric R. Bachmann**, *Professor*, Department of Computer Science and Software Engineering, Miami University, Ohio.
Email: bachmaer@miamioh.edu, Tel: (513) 529-0786

Collaborator **Dr. Arthur Carvalho**, *Dinesh & Ila Paliwal Innovation Chair & Associate Professor*, Department of Information Systems & Analytics, Miami University, `https://arthurcarvalho.info/`.
Email: carvalag@miamioh.edu, Tel: (513) 529-7162