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Academic Appointments

Assistant Professor, Department of Computer Science <i>James Madison University</i>	<i>Aug 2025 – Present</i> <i>Harrisonburg, VA, USA</i>
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Education

Ph.D., Electrical Engineering <i>Stevens Institute of Technology</i>	<i>2025</i> <i>Hoboken, NJ, USA</i>
• Advisor: Min Song, Ph.D.; Co-advisor: Shucheng Yu, Ph.D. • Dissertation: <i>Toward Secure and Efficient Cognitive Radio Networks: Adaptive PHY Security and Learning-Driven Optimization</i>	
M.S., Electronics Engineering <i>Kookmin University</i>	<i>2019</i> <i>Seoul, South Korea</i>
B.S., Electrical and Electronic Engineering <i>Khulna University of Engineering & Technology</i>	<i>2017</i> <i>Khulna, Bangladesh</i>

Research Interests

PHY security and privacy; cognitive radio; dynamic spectrum sharing; UAV-assisted and RIS-enabled wireless networks; machine learning for wireless optimization; optical communication systems; 6G.

Research Experience

Graduate Research Assistant, AISECLAB <i>Stevens Institute of Technology, Dept. of Electrical & Computer Engineering</i>	<i>Feb 2021 – Jun 2025</i> <i>Hoboken, NJ, USA</i>
Research Associate, WiComAI Lab <i>Kookmin University, Dept. of Electronics Engineering</i>	<i>Sep 2019 – Jan 2021</i> <i>Seoul, South Korea</i>
Graduate Research Assistant, WiComAI Lab <i>Kookmin University, Dept. of Electronics Engineering</i>	<i>Sep 2017 – Aug 2019</i> <i>Seoul, South Korea</i>

Research Impact

- Publications: 26 journal papers and 20 peer-reviewed international conference papers.
- Citation metrics: 2,076 citations; h-index: 20 (Google Scholar).

Publications

Peer-Reviewed Journal Articles

1. **M. K. Hasan**, S. Yu, and M. Song, "Channel-Adaptive Privacy Enhancement for NOMA-Based Antagonistic Overlay Cognitive Networks," *IEEE Transactions on Vehicular Technology*, vol. 75, no. 2, pp. 2910–2926, Feb. 2026.

2. M. O. Ali, **M. K. Hasan**, et al., "U-Net-Based Optical Camera Communication in Intensity-Constrained Scenarios," *Journal of Lightwave Technology*, vol. 43, no. 10, pp. 4712–4721, May 2025.
3. **M. K. Hasan**, X. Xue, S. Yu, and M. Song, "Cooperative NOMA-based spectrum leasing with multiple secondary users," *IEEE Transactions on Vehicular Technology*, 2023.
4. **M. K. Hasan**, M. O. Ali, M. H. Rahman, M. Z. Chowdhury, and Y. M. Jang, "Optical camera communication in vehicular applications: A review," *IEEE Transactions on Intelligent Transportation Systems*, 2021.
5. M. F. Ahmed, **M. K. Hasan**, M. Z. Chowdhury, and Y. M. Jang, "Continuous status monitoring of industrial valve using OCC-enabled wireless sensor network," *IEEE Transactions on Instrumentation and Measurement*, 2021.
6. M. O. Ali, M. F. Ahmed, **M. K. Hasan**, M. Shahjalal, M. H. Rahman, I. Jahan, and Y. M. Jang, "Mono camera-based optical vehicular communication for an advanced driver assistance system," *Electronics*, vol. 10, no. 13, 2021.
7. M. H. Rahman, M. Shahjalal, **M. K. Hasan**, M. O. Ali, and Y. M. Jang, "Design of an SVM classifier assisted intelligent receiver for reliable optical camera communication," *Sensors*, vol. 21, no. 13, 2021.
8. M. Z. Chowdhury, M. Shahjalal, **M. K. Hasan**, M. T. Hossain, and Y. M. Jang, "Optical wireless hybrid networks: Trends, opportunities, challenges, and research directions," *IEEE Communications Surveys & Tutorials*, vol. 22, no. 2, pp. 930–966, 2020.
9. F. Ahmed, **M. K. Hasan**, M. Shahjalal, M. M. Alam, and Y. M. Jang, "Design and implementation of an OCC-based real-time heart rate and pulse-oxygen saturation monitoring system," *IEEE Access*, vol. 8, pp. 198740–198747, 2020.
10. M. F. Ahmed, **M. K. Hasan**, M. Shahjalal, M. M. Alam, and Y. M. Jang, "Experimental demonstration of continuous sensor data monitoring using neural network-based optical camera communications," *IEEE Photonics Journal*, vol. 12, no. 5, pp. 1–11, Oct. 2020.
11. M. Shahjalal, **M. K. Hasan**, M. M. Islam, M. Z. Chowdhury, and Y. M. Jang, "A two-stage power allocation-based NOMA architecture for optical camera communication," *IEEE Systems Journal*, 2020.
12. **M. K. Hasan**, M. Z. Chowdhury, M. Shahjalal, M. M. Islam, and Y. M. Jang, "Optimum LED coverage utilization in OCC for effective communication with mobile robot," *Journal of Communications and Networks*, vol. 22, no. 5, pp. 371–379, Oct. 2020.
13. M. M. Alam, M. Shahjalal, M. M. Islam, **M. K. Hasan**, M. F. Ahmed, and Y. M. Jang, "Power flow management with demand response profiles based on user-defined area, load, and phase classification," *IEEE Access*, vol. 8, pp. 218813–218827, 2020.
14. M. M. Islam, M. S. Hossain, **M. K. Hasan**, M. Shahjalal, and Y. M. Jang, "Area-time efficient hardware implementation of modular multiplication for elliptic curve cryptography," *IEEE Access*, vol. 8, pp. 73898–73906, 2020.
15. M. M. Islam, M. S. Hossain, **M. K. Hasan**, M. Shahjalal, and Y. M. Jang, "Design and implementation of high-performance ECC processor with unified point addition on twisted Edwards curve," *Sensors*, vol. 20, no. 18, p. 5148, Sept. 2020.
16. M. Z. Chowdhury, M. T. Hossain, M. Shahjalal, **M. K. Hasan**, and Y. M. Jang, "A new 5G eHealth architecture based on optical camera communication: an overview, prospects, and applications," *IEEE Consumer Electronics Magazine*, vol. 9, no. 6, pp. 23–33, Nov. 2020.

17. **M. K. Hasan**, N. T. Le, M. Shahjalal, M. Z. Chowdhury, and Y. M. Jang, "Simultaneous data transmission using multilevel LED in hybrid OCC/LiFi system: Concept and demonstration," *IEEE Communications Letters*, vol. 23, no. 12, pp. 2296–2300, Dec. 2019.
18. M. M. Islam, M. S. Hossain, **M. K. Hasan**, M. Shahjalal, and Y. M. Jang, "FPGA implementation of high-speed area-efficient processor for elliptic curve point multiplication over prime field," *IEEE Access*, vol. 7, pp. 178811–178826, Dec. 2019.
19. M. Shahjalal, **M. K. Hasan**, M. Z. Chowdhury, and Y. M. Jang, "Smartphone camera-based optical wireless communication system: Requirements and implementation challenges," *Electronics*, vol. 8, no. 8, p. 913, Aug. 2019.
20. **M. K. Hasan**, M. Shahjalal, M. Z. Chowdhury, and Y. M. Jang, "Real-time healthcare data transmission for remote patient monitoring in patch-based hybrid OCC/BLE networks," *Sensors*, vol. 19, no. 5, p. 1208, March 2019.
21. M. Z. Chowdhury, M. Shahjalal, **M. K. Hasan**, and Y. M. Jang, "The role of optical wireless communication technologies in 5G/6G and IoT solutions: Prospects, directions, and challenges," *Applied Sciences*, vol. 9, no. 20, p. 4367, Oct. 2019.
22. **M. K. Hasan**, M. Z. Chowdhury, M. Shahjalal, V. T. Nguyen, and Y. M. Jang, "Performance analysis and improvement of optical camera communication," *Applied Sciences*, vol. 8, no. 12, p. 2527, Dec. 2018.
23. **M. K. Hasan**, M. Z. Chowdhury, M. Shahjalal, and Y. M. Jang, "Fuzzy-based network assignment and link-switching analysis in hybrid OCC/LiFi system," *Wireless Communications and Mobile Computing*, vol. 2018, Article ID: 2870518, 2018.
24. M. Shahjalal, M. T. Hossain, **M. K. Hasan**, M. Z. Chowdhury, N. T. Le, and Y. M. Jang, "An implementation approach and performance analysis of image sensor-based multilateral indoor localization and navigation system," *Wireless Communications and Mobile Computing*, vol. 2018, Article ID: 7680780, 2018.
25. M. Z. Chowdhury, M. T. Hossain, **M. K. Hasan**, and Y. M. Jang, "Integrated RF/optical wireless networks for improving QoS in indoor and transportation applications," *Wireless Personal Communications*, 2018.
26. M. T. Hossain, M. Z. Chowdhury, **M. K. Hasan**, M. Shahjalal, T. Nguyen, N. T. Le, and Y. M. Jang, "A new vehicle localization scheme based on combined optical camera communication and photogrammetry," *Mobile Information Systems*, vol. 2018, Article ID: 8501898, 2018.

Peer-Reviewed Conference Proceedings

1. **M. K. Hasan**, S. Yu, and M. Song, "Uplink secrecy in RIS-aided MIMO-NOMA networks with user-centric artificial noise," in Proc. IEEE International Conference on Communications (ICC), Montreal, QC, Canada, pp. 2617–2622, 2025.
2. N. C. Keerthana, **M. K. Hasan**, and M. Song, "MADDPG-driven uplink secrecy optimization for multi-user MIMO-NOMA networks," in Proc. 2025 28th International Conference on Computer and Information Technology (ICCIT), Cox's Bazar, Bangladesh, Dec. 2025.
3. M. Song, **M. K. Hasan**, and N. Ahmed, "Dynamic user pairing based on predicted channel information in NOMA networks," in Proc. Artificial Intelligence and Machine Learning for Multi-Domain Operations Applications VII, Orlando, FL, USA, 2025.
4. **M. K. Hasan**, S. Yu, and M. Song, "Secured full-duplex UAV-aided spectrum-sharing network based on NOMA," in Proc. IEEE International Conference on Mobile Ad-Hoc and Smart Systems (MASS), Toronto, ON, Canada, pp. 125–133, 2023.

5. **M. K. Hasan**, S. Yu, and M. Song, "Uplink secrecy analysis for UAV-enabled PD-NOMA-based underlay spectrum sharing networks," in Proc. IEEE Wireless Communications and Networking Conference (WCNC), Glasgow, United Kingdom, 2023.
6. X. Xue, **M. K. Hasan**, S. Yu, and M. Song, "Over-the-air federated learning with enhanced privacy," in Proc. IEEE International Conference on Communications (ICC), Rome, Italy, pp. 4546–4551, 2023.
7. **M. K. Hasan**, M. Shahjalal, M. M. Islam, M. M. Alam, M. F. Ahmed, and Y. M. Jang, "The role of deep learning in NOMA for 5G and beyond communications," in Proc. International Conference on Artificial Intelligence in Information and Communication (ICAIIIC), Fukuoka, Japan, pp. 303–307, 2020.
8. M. Shahjalal, **M. K. Hasan**, M. M. Islam, M. M. Alam, M. F. Ahmed, and Y. M. Jang, "An overview of AI-enabled remote smart-home monitoring system using LoRa," in Proc. International Conference on Artificial Intelligence in Information and Communication (ICAIIIC), Fukuoka, Japan, pp. 510–513, 2020.
9. M. M. Islam, I. Jahan, **M. K. Hasan**, and Y. M. Jang, "A decentralized energy trading system based on public blockchain," in Proc. International Conference on Information and Communication Technology Convergence (ICTC), pp. 658–661, 2020.
10. M. M. Islam, M. Shahjalal, **M. K. Hasan**, and Y. M. Jang, "Blockchain-based energy transaction model for electric vehicles in V2G network," in Proc. International Conference on Artificial Intelligence in Information and Communication (ICAIIIC), Fukuoka, Japan, pp. 628–630, 2020.
11. **M. K. Hasan**, M. Shahjalal, M. Z. Chowdhury, N. T. Le, and Y. M. Jang, "Simultaneous traffic sign recognition and real-time communication using dual camera in ITS," in Proc. International Conference on Artificial Intelligence in Information and Communication (ICAIIIC), Okinawa, Japan, pp. 517–520, 2019.
12. M. Shahjalal, **M. K. Hasan**, M. Z. Chowdhury, and Y. M. Jang, "Future optical camera communication-based applications and opportunities for 5G and beyond," in Proc. International Conference on Artificial Intelligence in Information and Communication (ICAIIIC), Okinawa, Japan, pp. 492–495, 2019.
13. M. Z. Chowdhury, **M. K. Hasan**, M. Shahjalal, E. B. Shin, and Y. M. Jang, "Opportunities of optical spectrum for future wireless communications," in Proc. International Conference on Artificial Intelligence in Information and Communication (ICAIIIC), Okinawa, Japan, pp. 004–007, 2019.
14. M. M. Islam, M. Shahjalal, **M. K. Hasan**, and Y. M. Jang, "Wireless power transfer with receiver authentication using ECC," in Proc. International Conference on Information and Communication Technology Convergence (ICTC), Jeju, Korea, 2019.
15. M. Shahjalal, M. M. Islam, **M. K. Hasan**, M. Z. Chowdhury, and Y. M. Jang, "Multiple access schemes for visible light communication," in Proc. International Conference on Ubiquitous and Future Networks (ICUFN), Zagreb, Croatia, 2019.
16. **M. K. Hasan**, M. Shahjalal, M. Z. Chowdhury, and Y. M. Jang, "Access point selection in hybrid OCC/RF eHealth architecture for real-time remote patient monitoring," in Proc. International Conference on Information and Communication Technology Convergence (ICTC), Jeju, Korea, pp. 716–719, 2018.
17. **M. K. Hasan**, M. Shahjalal, M. Z. Chowdhury, M. T. Hossan, and Y. M. Jang, "Fuzzy logic based network selection in hybrid OCC/Li-Fi communication system," in Proc. International Conference on Ubiquitous and Future Networks (ICUFN), Prague, Czech Republic, pp. 95–99, 2018.

18. M. Z. Chowdhury, M. Shahjalal, **M. K. Hasan**, M. T. Hossan, and Y. M. Jang, “Optical wireless hybrid networks for 5G and beyond communications,” in Proc. International Conference on Information and Communication Technology Convergence (ICTC), Jeju, Korea, pp. 709–712, 2018.
19. M. Shahjalal, **M. K. Hasan**, M. T. Hossan, M. Z. Chowdhury, and Y. M. Jang, “Error mitigation in optical camera communication based indoor positioning system,” in Proc. International Conference on Ubiquitous and Future Networks (ICUFN), Prague, Czech Republic, pp. 100–103, 2018.
20. M. Shahjalal, M. Z. Chowdhury, **M. K. Hasan**, M. T. Hossan, and Y. M. Jang, “A generalized SDN framework for optical wireless communication networks,” in Proc. International Conference on Information and Communication Technology Convergence (ICTC), Jeju, Korea, pp. 848–851, 2018.

Grants & Funding

Funded

- **Faculty Development Grant**, James Madison University. Role: PI. 2025.

Submitted

- **4-VA Collaborative Research Grant**, James Madison University. Role: PI. 2026.
- **CCI – Cybersecurity and Critical Infrastructure Research Call**, James Madison University. Roles: PI and Co-PI (two proposals). 2025.

Prior Research Support

- Contributed to externally funded research projects in wireless security and AI-enabled systems, Stevens Institute of Technology (Graduate Research Assistant, 2021–2025).

Teaching Experience

Courses Taught (Instructor)

IT 201: Computational Structures and Logic (Undergraduate, with Lab)	<i>Fall 2025, Spring 2026</i>
<i>James Madison University</i>	<i>Harrisonburg, VA, USA</i>
IT 212: Digital Electronics (Undergraduate, with Lab)	<i>Spring 2026</i>
<i>James Madison University</i>	<i>Harrisonburg, VA, USA</i>
EE/CPE/AAI 595: Applied Machine Learning (Graduate)	<i>Fall 2024, Spring 2025</i>
<i>Stevens Institute of Technology</i>	<i>Hoboken, NJ, USA</i>

Courses Taught (Graduate Teaching Assistant)

ENGR 232 / ENGR 212 Labs: Analog Circuits (Undergraduate, Lead Instructor)	<i>Jan 2022 – May 2024</i>
<i>Stevens Institute of Technology</i>	<i>Hoboken, NJ, USA</i>
Basic Electronic Circuits I Lab (Undergraduate)	<i>Sep 2019 – Dec 2019</i>
<i>Kookmin University</i>	<i>Seoul, South Korea</i>

Student Mentoring & Research Supervision

- James Madison University*Aug. 2025–Present*
- Research advisor to 2 undergraduate students on energy-aware IoT security.
 - Faculty supervisor for 1 senior capstone project on UAV-enabled wireless security.

Stevens Institute of Technology (Collaborative Mentoring)

2025–Present

- Co-mentor for 2 undergraduate projects on cross-layer wireless security.
- Research mentor for 3 graduate students on AI-powered mental health prediction.

Prior Mentoring

- Peer Mentor (Official), Doctoral Student Peer Mentoring Program, Stevens Institute of Technology (2022–2025).
- Academic mentor, ECE Scholarship Program (master’s and undergraduate students).

Professional Service

Journal Reviewing

Reviewer for journals including: IEEE Transactions on Communications; IEEE Transactions on Vehicular Technology; IEEE Journal on Selected Areas in Communications; IEEE Communications Magazine; IEEE Access; Computer Networks; Scientific Reports; and others.

Conference Service

- IEEE INFOCOM 2026 – TPC (EIN 2026)
- IEEE INFOCOM 2026 – TPC (ISAC-FutureG 2026)
- IEEE SM 2026, IEEE GCAIoT 2025, ICCIT 2025, EICT 2025 – Reviewer
- IEEE INFOCOM 2023 — Lead Student Volunteer.
- ICUFN 2018, KICS 2018 — Student Volunteer.

Leadership

- President, ECE PhD Research Club, Stevens Institute of Technology (Mar. 2023 – May 2025).
- President, Bangladeshi Student Association (BSA), Stevens Institute of Technology (Jun. 2024 – May 2025).

Honors & Awards

- Provost Doctoral Fellowship, Stevens Institute of Technology (2021).
- First Prize, PhD Research Expo, Stevens Institute of Technology (2023).
- Third Prize, ECE Three Minute Thesis Competition, Stevens Institute of Technology (2024).
- Graduate School Academic Excellence Award, Kookmin University (2019).

Professional Development

- Teaching at the College Level Certificate Program, Stevens Institute of Technology.

References

Available upon request.