

Curriculum Vitae

Yazan Otoum

October 2, 2024

a) Name and Rank Status

Name: Yazan Otoum, Ph.D., P.Eng.

Rank: Assistant Professor of Cybersecurity, Tenure Track

Member of the Graduate Faculty: Yes

b) Overview

Over ten years of teaching experience, curriculum development, and practical industry experience in cybersecurity, AI and computer networks.

Co-supervised 8+ master's students in their thesis, co-ops, and projects.

Holds key certifications such as CEH, CCNA, CHFI, and ISO 27001 Lead Implementer.

Licensed Professional Engineer (P.Eng.) in Ontario.

Active contributor to the academic community through roles as a Guest Editor, technical program committee member, and peer reviewer for reputable journals and conferences.

Demonstrated leadership within academic, professional, and industry communities, including serving as President of the EEGSA, engaging in IEEE activities, and leading key projects and initiatives.

c) Degrees

Ph.D. Electrical and Computer Engineering, University of Ottawa, Canada, 2022

Dissertation title: AI-Based Intrusion Detection Systems to Secure Internet of Things (IoT)

M.Sc. Networks Engineering and Management, DePaul University, USA, 2009

B.Sc. Software Engineering, Philadelphia University, Jordan, 2006

d) Employment History

2024 - Present **Assistance Professor of Cybersecurity**

School of Computer Science and Technology- Algoma University *Brampton, ON, Canada*

Courses Taught:

- Data Structures I, Data Structures II, and Introduction to Cybersecurity (Graduate Course).

2022 - 2024 **Part-time Professor**

School of Electrical Engineering and Computer Science - University of Ottawa *Ottawa, ON, Canada*

Courses Taught:

- Data Structures and Algorithms, Fundamentals of Data Science, and Introduction to Computing I.

2022 - 2024 **Part-time Professor**

School of advanced Technology - Algonquin College *Ottawa, ON, Canada*

Courses Taught:

- Fundamentals of digital forensics and discovery, and Network security lab.

2018 – 2022 **Research Assistant/Teaching Assistant**

School of Electrical Engineering and Computer Science – University of Ottawa *Ottawa, ON, Canada*

Courses Taught:

- Computer Architecture, Digital Systems, Introduction to Computing I, Operating Systems, and Introduction to Artificial Intelligence.

Key Contributions:

- Guiding five Master’s students, where I was responsible for planning, task scheduling, and timeline management. My key contributions included proposing and overseeing the development of security frameworks, focusing on intrusion detection systems within the Internet of Things (IoT) and Federated Learning.

2011 - 2018 **Lecturer**

Computer Engineering Department - Majmaah University *Majmaah, Riyadh, KSA*

Courses Taught:

- Data Communications and Networking, Network Security, Wireless Systems, Routing and Switching, OS Digital Forensics, Fuzzy logic and Neural network lab, AI lab (Robotics and Algorithms), Network Monitoring and Maintenance, Cloud Computing, Network Operating Systems, and Introduction to Programming.

Key Contributions:

- Founded and managed the "Digital Citizenship" project under the "Digital Development – Saudi Vision 2030" initiative, targeting various levels of participants to enhance responsible engagement with technology tools, the internet, digital literacy, cybersecurity, policies, privacy, and e-commerce.
- Designed a comprehensive training curriculum with interactive activities covering digital footprint and identity, privacy and security, copyright issues, and online harassment.
- Authored several lab manuals for courses, including Professional Electives I and II (Cisco Path) and Operating Systems Digital Forensics courses.

2009 – 2011 **Team Leader and System Administrator - EduWave K-12® project**
Queen Rania Center for Information and Education Technologies *Amman, Jordan*

Main Roles:

- Administer a comprehensive education platform for 2+ million users.
- Design and setup a disaster recovery sites.
- Run a data center (SAN storage, Servers, and Network).
- Analyzing cyber threads with the help of other 3rd party security tools and devices such as Cisco firewalls and Intrusion Detection Systems (IDS).
- Manage and operate system backups and monitor and tune performance.

Key Contributions:

- My team and I took over the operation and maintenance support, previously managed by an external company, leading to significant annual savings of over 1 million USD in support contract costs.
- Designed a disaster recovery site for the administered system, ensuring adherence to required standards, including ISO/IEC 24762:2008.

2009 - 2011 **System Administrator**
e-Government project system administrator and service coordinator *Amman, Jordan*

2009 **Network Administrator**
Queen Rania Center for Information and Education Technologies *Amman, Jordan*

Main Roles:

- Technical support and troubleshooting for Wire/Wireless networks (Routers, Switch's, AP's), MS Windows environment.
- ISA, DHCP, Active Directory, and Exchange servers' admin.

2007 - 2009 **Technical Support**
EduWave K-12® project *Amman, Jordan*

Main Roles:

- Provide 3rd level system help desk and Technical support.

e) Honours and Awards

2023 Cybersecurity Career Mentor Badge – Recognized by the EC-Council for mentoring the next generation of cybersecurity professionals.

2019 Instructor 5 Years of Service Badge – Awarded by Cisco for five years of active participation and impactful teaching in the Cisco Networking Academy.

2018 Award and Certificate of Appreciation from "Saudi Vision 2030" for the "Digital Citizenship" Project – Honored for creating outstanding training materials that contributed to winning the best project award.

2017 Certificate of Thanks and Appreciation from the Dean of the College of Computer Sciences and Information Technology, Majma'ah University – Recognized for significant contributions to ABET accreditation.

- 2017 Certificate of Thanks and Appreciation from the President of Majma'ah University – Acknowledged for a pivotal role in founding and organizing a nationwide robotics competition in Saudi Arabia.
- 2017 Certificate of Appreciation from the President of Majma'ah University – Awarded for organizing a successful national cybersecurity boot camp, enhancing cybersecurity education and awareness among undergraduates.
- 2011 Certificate of Appreciation from the University of Jadara, Jordan – Granted for delivering an impactful presentation on the application of eLearning and digital tools in education.

f) Scholarly and Professional Activities

- 2024 Guest Editor for the MDPI-Electronics special issue titled "IoT Security in the Age of AI: Innovative Approaches and Technologies."
- 2022 - 2024 Served as a Technical Program Committee (TPC) Member for the IEEE International Mediterranean Conference on Communications and Networking (IEEE MEDITCOM).
- 2020 - 2021 Technical Program and Special Tracks Committee Member for the Annual Undergraduate Research Conference on Applied Computing (URC).
- 2020 - 2021 Participated in the Technical Program and Special Tracks Committee for the Third International Workshop on Intelligent Transportation and Connected Vehicles Technologies (ITCVT).

Peer Reviewing for IEEE Journals and Magazines

- Internet of Things Journal - 6 reviews.
- Access Journal - 4 reviews.
- Consumer Electronics Magazine - 4 reviews.
- Wireless Communications Magazine - 4 reviews.
- Network Magazine - 4 reviews.
- Transactions on Intelligent Transportation Systems - 2 reviews.
- Transactions on Green Communications and Networking - 1 review.

Peer Reviewing for ACM Publications

- Computing Surveys - 2 reviews.
- Transactions on Internet Technology - 1 review.

Peer Reviewing for Springer

- Peer-to-Peer Networking and Applications - 1 review.

Peer Reviewing for Elsevier Journals

- Sustainable Cities and Society - 1 review.
- Computer Communications - 1 review.
- Future Generation Computer Systems - 1 review.
- Computer Networks - 1 review.
- Computer Standards and Interfaces - 1 review.

– Journal of Parallel and Distributed Computing - 1 review.

Peer Reviewing for Wiley

– International Journal of Communication Systems - 3 reviews.

g) Graduate Co-Supervision

2023 - Pratish Pushparaj (MA), Intrusion Detection System Model Leveraging LLaMA 2 with Generative Dataset Augmentation.

2023 - 2024 Chaosheng Hu (MA), Heart Disease Prediction with Federated Learning and Blockchain Integration.

2023 Siddhant Tiwari (MA), Differential Privacy-Driven Framework for Enhancing Heart Disease Prediction.

2023 Navya Gottimukkala (MA), Machine Learning in Metaverse Security.

2022 - 2023 Paritosh Singh (MA), Deep Collaborative Learning for Robust Healthcare Security.

2020 - 2021 Yue Wan (MA), Federated Transfer Learning-Based IDS for the Internet of Medical Things (IoMT).

2020 - 2021 Sai Yadlapalli (MA), Federated transfer learning framework for securing IoT.

h) Graduate Courses (Past 7 Years)

Topics in Machine Learning-AI for Cybersecurity Applications

Wireless Ad-hoc Networking

Software Defined Networks (SDN) and Cloud Computing

Multimedia Communication

Introduction to Deep Learning (DL) and Reinforcement Learning (RL)

h) External Research Funding (Past 7 Years)

Year	Source	Purpose	Amount per year
2014 - 2018	Majmaah University	Support Projects and Initiatives	\$30 000
2018 - 2022	University of Ottawa	Research	\$12 000
2024 -	Algoma University	Research Funds	\$10 000
2024 -	Algoma University	Professional Allowance funds	\$1900
2024 -	Algoma University	Travel	\$1200

i) Selected Publications

Journal and Magazine Articles

- [1] Otoum, Yazan, Vinay Chamola, and Amiya Nayak. “Federated and Transfer Learning-Empowered Intrusion Detection for IoT Applications”. In: *IEEE Internet of Things Magazine* 5.3 (2022), pp. 50–54.

- [2] Otoum, Yazan, Navya Gottimukkala, Neeraj Kumar, and Amiya Nayak. “Machine Learning in Metaverse Security: Current Solutions and Future Challenges”. In: *ACM Computing Surveys* 56.8 (2024), pp. 1–36.
- [3] Otoum, Yazan, Chaosheng Hu, Eyad Haj Said, and Amiya Nayak. “Enhancing Heart Disease Prediction with Federated Learning and Blockchain Integration”. In: *MDPI Future Internet* (2024). Accepted.
- [4] Otoum, Yazan, Dandan Liu, and Amiya Nayak. “DL-IDS: a deep learning-based intrusion detection framework for securing IoT”. In: *Transactions on Emerging Telecommunications Technologies* 33.3 (2022), e3803.
- [5] Otoum, Yazan and Amiya Nayak. “As-ids: Anomaly and signature based ids for the internet of things”. In: *Journal of Network and Systems Management* 29 (2021), pp. 1–26.
- [6] Eyad Haj Said, Otoum, Yazan, and Amiya Nayak. “A Scalable Meta Learning-Based Model to Secure IoT Networks”. In: *IEEE Internet of Things Magazine* 6.2 (2023), pp. 116–120.

Conferences

- [1] Otoum, Yazan and Amiya Nayak. “On securing IoT from deep learning perspective”. In: *2020 IEEE Symposium on Computers and Communications (ISCC)*. IEEE. 2020, pp. 1–7.
- [2] Otoum, Yazan and Amiya Nayak. “Signature-over-the-air with transfer learning ids for intelligent connected vehicles (icv)”. In: *2021 IEEE Globecom Workshops (GC Wkshps)*. IEEE. 2021, pp. 1–6.
- [3] Otoum, Yazan, Paritosh Singh, and Amiya Nayak. “Advancing IoMT Defenses: Deep Collaborative Learning for Robust Healthcare Security”. In: *2024 IEEE Globecom*. Accepted. IEEE. 2024, pp. 1–7.
- [4] Otoum, Yazan, Yue Wan, and Amiya Nayak. “Federated transfer learning-based ids for the internet of medical things (iomt)”. In: *2021 IEEE Globecom Workshops (GC Wkshps)*. IEEE. 2021, pp. 1–6.
- [5] Otoum, Yazan, Yue Wan, and Amiya Nayak. “Transfer learning-driven intrusion detection for Internet of Vehicles (IoV)”. In: *2022 International Wireless Communications and Mobile Computing (IWCMC)*. IEEE. 2022, pp. 342–347.
- [6] Otoum, Yazan, Sai Krishna Yadlapalli, and Amiya Nayak. “FTLIoT: A Federated Transfer Learning Framework for Securing IoT”. In: *GLOBECOM 2022-2022 IEEE Global Communications Conference*. IEEE. 2022, pp. 1146–1151.

Thesis

- [1] Yazan Otoum. “AI-Based Intrusion Detection Systems to Secure Internet of Things (IoT)”. PhD thesis. Université d’Ottawa/University of Ottawa, 2022.

j) Certifications and Recognitions

- 2023 Cybersecurity Career Mentor Badge – Recognized by the EC-Council for mentoring the next generation of cybersecurity professionals.
- 2019 Instructor 5 Years of Service Badge – Awarded by Cisco for five years of active participation and impactful teaching in the Cisco Networking Academy.

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Date

Date of Submission: October 2, 2024