Anastassia Gharib, PhD

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EDUCATION

Doctor of Philosophy in Electrical and Computer Engineering   Feb. 2023
Department of Systems & Computer Engineering, Carleton University, Ottawa, ON, Canada
- Thesis Title: "[Cluster-Based Information-Centric Wireless Sensor Networks Management for Enhanced User Security Satisfaction in the Internet of Things](#)"
- [Received Senate Medal for Outstanding Academic Achievements](#)

Master of Applied Science in Electrical and Computer Engineering   June 2018
Department of Systems & Computer Engineering, Carleton University, Ottawa, ON, Canada
- Thesis Title: "[Distributed Learning-Based Cooperative Spectrum Sensing for Cognitive Internet of Things Systems](#)"
- Nominated for the University Medal

Bachelor's in Electrical Engineering/Communications and Electronics   Apr. 2015
Jordan University of Science and Technology, Irbid, Jordan
- Project Title: "Radio Frequency Energy Harvester for Low-Voltage Applications"
- Ranked first with the GPA: 93.2/100, Distinguished

PEDAGOGICAL EXPERIENCE

Lecturer   Sept. 2023 – present
Department of Communications Engineering/Internet of Things, PSUT, Amman, Jordan
- *Department of Computer Engineering / Networks and Information Security Courses:*
  - Network Security / Wireless Network Security
  - Microprocesses and Embedded Systems
- *Supervising four senior projects* in the fields of security-by-design, blockchains, Internet of Things
- Principal Co-Investigator for Research Project: "Towards a Sustainable PSUT: Semantic Data Integration of the IoT Devices"

Part-Time Instructor   Winter Term 2023
Department of Electrical Engineering, German Jordanian University, Madaba, Jordan
- *Courses:*
  - Random Variables and Stochastic Processes / Probabilistic Methods in Electrical and Communication Engineering
  - Communication System I / Analog Communication Systems

Contract Instructor   Fall Terms 2019, 2020, 2021
Optical Sensors and Systems, Carleton University, Ottawa, ON, Canada
- *Course:* OSS/PLT 4008 Remote Sensing, *Lab:* OSS/PLT 4008A Remote Sensing Lab
- Was the first person to design and offer this course and lab at Carleton University
- Prepared the course syllabus, material, assessments, adapted the course to online learning during the Covid-19 pandemic
- Prepared the labs, material, assessments, research project, adapted the lab to online learning during the Covid-19 pandemic

Educational and Development Center (EDC) Teaching Assistant Mentor   Sept. 2018 – Apr. 2019
Carleton University, Ottawa, ON, Canada
- Conducted research in Experiential Learning Education
- Produced, facilitated, and gave workshops for graduate Teaching Assistants
- Supported departmental Teaching Assistant Mentors
- Was an Adjudication Committee Member for the EDC Outstanding Teaching Assistant Award

Teaching Assistant   Sept. 2016 – Apr. 2021

Faculty of Engineering & Design, Carleton University, Ottawa, ON, Canada

- *Courses:*
    - SYSC 3203 – Bioelectrical Systems
    - ECOR 1606 – Introduction to Programming with C++
    - ECOR 1051 – Introduction to Engineering with Python
    - SYSC 3501 – Communication Theory
    - SYSC 4502 – Communications Software
    - SYSC 4700 – Telecommunications Engineering
- Prepared and provided tutorials, supervised labs, mentored projects

RESEARCH & INDUSTRY EXPERIENCE

Research Assistant   Sept. 2016 – Dec. 2022

Sensor Systems & Internet of Things Lab, Carleton University, Ottawa, ON, Canada

Data Analytics Intern   July 2018

PricewaterCoopers (PwC) Middle East

Quality Assurance Engineer   June 2015 – Mar. 2016

Systems and Electronic Development FZCO (SEDCO)

Communications Engineering Intern   Feb. – May 2015

ZAIN Jordan

SELECTED PROFESSIONAL SERVICES

Organizing Committee Member and WICE/WIE Chair   2023 – 2024

IEEE WCNC 2024 - IEEE Wireless Communications and Networking Conference

Program Committee Member   2024

IEEE ICMI 2024 – IEEE International Conference on Computing and Machine Intelligence

Reviewer   Apr. 2018 – present

IEEE, Institute of Electrical and Electronics Engineers

- **Journals/Magazines/Letters**: IEEE Transactions on Artificial Intelligence, IEEE Transactions on Systems, Man, and Cybernetics, IEEE Systems Journal, IEEE Transactions on Vehicular Technology, IEEE Communications Magazine, IEEE Wireless Communications Letters, IEEE Wireless Communications Magazine, IEEE Transactions on Cognitive Communications and Networking, IEEE Open Journal of Communications Society, Jordanian Journal of Computers and Information Technology (JJCIT).
- **Conferences**: IEEE conference proceedings (IEEE International Conference on Computing and Machine Intelligence (ICMI) 2024, IEEE ICC 2024: SAC Reconfigurable Intelligent Surfaces and Smart Environments Track, IEEE GLOBECOM 2023: Cognitive Radio and AI-Enabled Networks Symposium, IEEE VTC2023-Fall: Emerging Technologies, 5G and Beyond Track, IEEE INFOCOM 2023 PerAI-6G: Pervasive Network Intelligence for 6G Networks, IEEE Canadian Conference on Electrical and Computer Engineering (CCECE), IEEE Conference on Communications and Network Security (CNS), IEEE International Conference on Communications (ICC), etc.)

Technical Activities Board Representative   Jan. 2022 – Dec. 2023

IEEE Women in Engineering

- The IEEE Technical Activities Board representative on the IEEE Women In Engineering (WIE) Committee serves as a bridge between IEEE WIE and IEEE Societies and Councils, acting as an IEEE WIE Societies and Councils Subcommittee Chair

Voting Committee Member (Global) Jan. 2021 – Dec. 2023
IEEE Women in Engineering

- Member of IEEE WIE International Leadership Summit Subcommittee (2021), IEEE WIE Awards and Nominations Subcommittee (2021), IEEE WIE Diversity & Inclusion Subcommittee (2022), IEEE WIE Strategic Planning Committee (2022), and IEEE WIE 25th Anniversary Subcommittee (2021-2022)
- Chair, IEEE WIE Regional Coordinators Subcommittee (2021)
- Chair, IEEE WIE Societies and Councils Subcommittee (2022)
- Co-chair, IEEE WIE Technical Activities Subcommittee (2023)

Affinity Groups Representative Jan. – Dec. 2021
IEEE Women in Engineering

Panelist 2021 – 2022
Engineers of Tomorrow, Ottawa, ON, Canada

Judge 2019 – 2020
Faculty of Engineering & Design, University of Ottawa, Ottawa, ON, Canada

- 2019 and 2020 Editions of the Engineering and Computer Science Graduate Poster Competition

Chair 2019-2020
IEEE Women in Engineering Ottawa Section

- Under my leadership, IEEE WIE Ottawa received the local (Ottawa), regional (R7 - Canada), and global Best IEEE WIE Affinity Group of the Year Awards for the first time in history all in 2020
- Led the team of 20+ volunteers; organized 50+ talks/seminars/webinars, three lunch & learn events, and the first hackathon
- [Recognized for work supporting WIE by Carleton University](#)

Technical Program Committee (TPC) Member Jan. 2018
IEEE International Conference on Communications (ICC) Workshops: 5G Ultra Dense Networks

Workshop Lead & Volunteer (Go Eng Girl & Go Code Girl) 2017 – 2018
Carleton University Women in Science & Engineering

PUBLICATIONS

Journal Papers

[J1] **A. Gharib** and M. Ibnkahla, "[User Security Oriented Information-Centric IoT Nodes Clustering With Graph Convolution Networks](#)," in *IEEE Internet of Things Journal*, Early Access, Sept. 2023.

[J2] **A. Gharib** and M. Ibnkahla, "[Heterogeneous Cluster-Based Information-Centric Sensor Networks with User Security Satisfaction](#)," in *IEEE Internet of Things Journal*, vol. 10, no. 9, pp. 8123-8139, May 2023.

[J3] **A. Gharib** and M. Ibnkahla, "[Node Embedding for Security-Aware Clustering of Mobile Information-Centric Sensor Networks](#)," *IEEE Internet of Things Journal*, vol. 9, no. 18, pp. 17249-17264, Sept. 2022.

[J4] **A. Gharib**, W. Ejaz, and M. Ibnkahla, "[Distributed Spectrum Sensing for IoT Networks: Architecture, Challenges, and Learning](#)," *IEEE Internet of Things Magazine*, vol. 4, no. 2, pp. 66-73, June 2021.

[J5] **A. Gharib**, W. Ejaz, and M. Ibnkahla, "[Scalable Learning-based Heterogeneous Multi-band Multi-user Cooperative Spectrum Sensing for Distributed IoT Systems](#)," *IEEE Open Journal of Communications Society*, vol. 1, pp. 1066-1083, July 2020.

[J6] **A. Gharib**, W. Ejaz and M. Ibnkahla, "[Enhanced Multiband Multiuser Cooperative Spectrum Sensing for Distributed CRNs](#)," *IEEE Transactions on Cognitive Communications and Networking*, vol. 6, no. 1, pp. 256-270, Mar. 2020.

Conference Papers

[C1] **A. Gharib** and M. Ibnkahla, "Security-Aware Cluster Head Selection in WSNs for IoT," *IEEE ICC - IEEE International Conference on Communications*, Montreal, Canada, June 2021, pp. 1-6.

[C2] **A. Gharib**, W. Ejaz, and M. Ibnkahla, "Distributed Learning-based Multi-band Multi-user Cooperative Sensing in Cognitive Radio Networks," *IEEE GLOBECOM - IEEE Global Communications Conference*, Abu Dhabi, United Arab Emirates, Dec. 2018, pp. 1-6.

[C3] Z. Bouida, **A. Gharib**, and M. Ibnkahla, "Secondary Systems Scheduling Using Precoding-Aided Space Shift Keying for Overlay Cognitive Radio," *IEEE WCNC - IEEE Wireless Communications and Networking Conference*, Barcelona, Spain, Apr. 2018, pp. 1-5.

Posters

[P1] **A. Gharib**, W.Ejaz, and M. Ibnkahla, "Heterogeneous Multi-band Multi-user Cooperative Spectrum Sensing for Spectrum Analytics in IoT Systems," *Data Day 5.0*, Carleton University, June 5, 2018.

[P2] **A. Gharib**, Z. Bouida, W. Ejaz, and M. Ibnkahla, "Cognitive Radio for the Internet of Things: Applications and Challenges," *the Natural Sciences and Engineering Research Council (NSERC) visit*, Jan. 26, 2017.

Technical Reports

[R1] A. Eldosouky, M. Abu Issa, A. Farhat, A. Jawad, **A. Gharib**, M. Ibnkahla, J. Jaskolka, and A. Matrawy, "Best Practices Guide for Secure E-health IoT Systems," technical report to *the System-level Security for IoT-enabled e-Health Systems CSSP Project,* pp. 1-20, Sept. 30, 2022.

[R2] **A. Gharib**, A. Eldosouky, J. Jaskolka, A. Matrawy, and M. Ibnkahla, "End-to-End Security Policies for Heterogeneous Connected Medical Devices," technical report to *the System-level Security for IoT-enabled e-Health Systems CSSP Project,* pp. 1-142, Oct. 31, 2021.

[R3] **A. Gharib**, J. Jaskolka, A. Matrawy, and M. Ibnkahla, "Establishing a Framework for Deployable Security-by-Design Features," technical report to *the System-level Security for IoT-enabled e-Health Systems CSSP Project,* pp. 1-31, Oct. 31, 2020.

[R4] **A. Gharib**, F. Lagum, and M. Ibnkahla, "Collaborative System Architecture," technical report to *the Sentiment and Textual Analysis Project*, pp. 1-5, Jan. 2020.

[R5] **A. Gharib**, A. Farhat, J. Samuel, J. Jaskolka, M. Ibnkahla, and A. Matrawy, "Report on Foundational Understanding of IoT-enabled e-Health Systems and Their Security Requirements," technical report to *the System-level Security for IoT-enabled e-Health Systems CSSP Project,* pp. 1-42, Oct. 15, 2019.

[R6] **A. Gharib**, A. Farhat, M. Ibnkahla, J. Jaskolka, and A. Matrawy, "Report on OneM2M and Other Standards," technical report to *the System-level Security for IoT-enabled e-Health Systems CSSP Project,* pp. 1-53, Oct. 15, 2019.

SELECTED ORAL PRESENTATIONS & TALKS

[T1] **A. Gharib** (panelist), "Panel Discussion: Women in AI, IoT, and Blockchain," IEEE International Conference on Artificial Intelligence, Blockchain and Internet of Things (AIBThings) 2023, Sept. 17. 2023.

[T2] **A. Gharib** and A. Matrawy, "Security Policies Framework for the Internet of Things Enabled E-health Systems," *Carleton University E-Health Security Workshop*, Sept. 29, 2022.

[T3] **A. Gharib** (guest speaker and panelist), "Meeting User Security Needs in the Internet of Things Era," *Carleton University Breakthrough Breakfast*, Mar. 3, 2022.

[T4] **A. Gharib** (invited speaker), "Cluster-Based Wireless Internet of Things Sensor Networks with Security Built-in by Design," *EE@JUST Seminars*, Jan. 17, 2022.

[T5] **A. Gharib** and A. Matrawy, "Selected Security Policies for Connected Medical Internet of Things Devices," *Carleton University E-Health Security Workshop*, Dec. 2, 2021.

[T6] **A. Gharib** (guest speaker), "Routing for Internet of Things Enabled Wireless Sensor Networks," *SYSC5801: Advanced Network Routing Course, Carleton University*, Apr. 13, 2021.

[T7] **A. Gharib** (invited speaker and IoT613 showcase panelist), *"*System-level Security for IoT-enabled e-Health Systems," *Annual IoT613 Conference,* May 9, 2019.

[T8] **A. Gharib** (invited speaker and IoT613 showcase panelist), "Scalable Learning-based Cooperative Spectrum Sensing for Distributed IoT Systems," *Annual IoT613 Conference*, Apr. 20, 2018.

SELECTED CERTIFICATES

Selected Technical Certificates:

- **Deep Learning Specialization** – Coursera – May 2022 – Credential ID 4BSHUA8DFN4W
  - Neural Networks and Deep Learning, Improving Deep Neural Networks, Structuring Machine Learning Projects, Convolutional Neural Networks, Sequence Models
- **Fundamentals of Reinforcement Learning** – Coursera – Feb. 2022 – Credential ID K2Y8GMFUT9RS
- **Cloud Computing Basics (Cloud 101)** – Coursera – Jan. 2021 – Credential ID AS3A7NUDS76A
- **Machine Learning with Python** – Centre of Excellence in Next Generation Networks (CENGN) – Aug. 2022
- **Docker and Kubernetes Level 1** – Centre of Excellence in Next Generation Networks (CENGN) – Aug. 2021
- **Python Essentials** – Cisco Networking Academy – May 2021
- **Introduction to Lidar** – NOAA, U.S. Department of Commerce – Sept. 2020
- **NGN Linux Unhatched** – Cisco Networking Academy – Oct. 2020
- **Cybersecurity Essentials** – Cisco Networking Academy – Aug. 2020
- **Introduction to Cybersecurity** – Cisco Networking Academy – Oct. 2019
- **CCNA 1** – Cisco Networking Academy – Nov. 2017
- **Introduction to Internet of Things** – Cisco Networking Academy – Nov. 2017

Selected Pedagogical and Research Certificates:

- **Course Design Fundamentals Program** – Teaching & Learning Services, Carleton University, Ottawa, ON, Canada – Nov. 2021
  - Completed 15 hours of workshops focused on essential course design strategies; completed a guided reflection article
- **Certificate in University Teaching** – EDC, Carleton University, Ottawa, ON, Canada – Apr. 2020
  - Presented a 25-minute lecture entitled "Introduction to Remote Sensing" to non-technical audience
  - Completed a guided reflection article
- **Certificate in Teaching Assistants Skills** – EDC, Carleton University, Ottawa, ON, Canada – Apr. 2018
  - Completed 12 hours of workshops and a guided reflection article
  - Completed 12 hours of workshops and a guided reflection article
- **Certificate of Completion for Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans Course on Research Ethics** – Government of Canada – May. 2021

HONORS & AWARDS

Grants

Towards a Sustainable PSUT: Semantic Data Integration of the IoT Devices   November 2023
Princess Sumaya University for Technology

- I serve as a Principal Co-Investigator for this project in collaboration with a Data Science Department faculty member.
- Research Grand of 7725JOD

Pedagogical Awards

Teaching Excellence Award Recipient   June 2018
Issued by Carleton University Students' Association

Selected Professional Services Awards

Nominated for the Best Reviewer Award   Jan. 2023
IEEE Transactions on Systems, Man and Cybernetics: Systems
IEEE Transactions on Artificial Intelligence

Featured in an IEEE WIE Magazine Article   June 2022
Issued by IEEE Women in Engineering Magazine

Featured in an SCEDI Newsletter   Feb. 2022
Issued by Systems and Computer Engineering Department, Carleton University

IEEE WIE Committee Outstanding Volunteer of the Year Award   Dec. 2021
Issued by IEEE Women in Engineering

IEEE Volunteering Leadership Training Program Certificate   Dec. 2021
Issued by IEEE Member and Geographic Activities

IEEE Canada Women in Engineering Prize   May 2019
Issued by IEEE Canadian Foundation

IEEE Certificate of Appreciation for Outstanding Services and Contributions   Dec. 2019, 2020
Issued by IEEE Ottawa Section

Scholarships & Prizes

Senate Medal for Outstanding Academic Achievements   June 2023
Carleton University

Ontario Graduate Scholarship (OGS)   Sept. 2020 – Aug. 2022
Issued by the Province of Ontario and Carleton University

1st Place in Data Day 5.0 Poster Competition   June 2018
Issued by Institute of Data Science - Carleton University

Nominated for the University Medal Apr. 2018
Carleton University

International Doctoral Bursary Sept. 2018 – Aug. 2023
Issued by Carleton University

Departmental Scholarship Summer Terms 2017 – 2022
Issued by Systems and Computer Engineering Department - Carleton University

SELECTED PROFESSIONAL AFFILIATIONS & MEMBERSHIP

IEEE, Institute of Electrical and Electronics Engineers   Jan 2018 – present
IEEE Systems, Man, and Cybernetic Society   Jan 2022 – present
IEEE Computer Society   Jan 2020 – present
IEEE Internet of Things Community   Jan 2020 – present
IEEE Communications Society   Jan 2018 – present
IEEE Women in Engineering   Jan 2018 – present
IEEE Young Professionals   Jan 2018 – present
Jordan Engineers Association   Jan 2015 – present

CITIZENSHIP

Jordanian, Russian

REFERENCES

Will be furnished upon request.