ABDULLAH ALOMARI,PhD

(Curriculum Vitae)

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Associate Professor of Network and Information Security
Department of Computer Science
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Abdullah Alomari received the bachelor's degree in computer science from Umm Al-Qura University, Saudi Arabia, in 2008, and the M.Sc. and Ph.D. degrees in engineering mathematics and internetworking from Dalhousie University, Halifax, Canada, in 2012 and 2018, respectively. He is currently an Associate Professor of networks and information security with the Department of Computer Science, Al-Baha University, Saudi Arabia. His research interests include cybersecurity, the IoT, and emergent technologies in communication networks. He is a member of the IEEE Communication Society and ACM.

Experience

Aug 2023 Apr 2020	Vice-Dean of Information Technology *Deanship of E-Learning and Information Technology, Al-Baha University, Saudi Arabia*
Aug 2023 Nov 2019	Supervisor of the Department of the University's Portal *Deanship of E-Learning and Information Technology, Al-Baha University, Saudi Arabia*
Present Apr 2023	Associate Professor *Faculty of Computer Science and Information Technology, Al-Baha University, Saudi Arabia*
Apr 2023 Dec 2018	Assistant Professor *Faculty of Computer Science and Information Technology, Al-Baha University, Saudi Arabia*
Dec 2018 Nov 2013	Lecturer *Faculty of Computer Science and Information Technology, Al-Baha University, Saudi Arabia*
Jan 2013 Sep 2012	Lecturer *Deanship of Introductory Year, Al-Baha University, Saudi Arabia*

Education

May 2018 Jan 2013	**PhD** in Engineering Mathematics and Internetworking, **Dalhousie University**, Halifax, NS, Canada
Aug 2012 Sep 2010	**MSc** in Engineering Mathematics and Internetworking, **Dalhousie University**, Halifax, NS, Canada
Jul 2008 Sep 2004	**Bechelor** of Computers, **Umm Al-Qura University**, Saudi Arabia

Administrative Activities

I served as a member of the following committees at Al-Baha University:

2019 - 2023	**Member**, Executive Committee of E-Transactions
2020 - 2023	**Member**, Permanent Committee of Offer Analysis
2020 - 2020	**Consultant**, Deanship of Quality and Academic Accreditation
April 2020	**Member**, COVID-19 Crisis Management Team

I served as a member of the following committees in the Deanship of E-Learning and Information Technology (DeIT) at Al-Baha University:

2020 - 2021	**Coordinator**, Committee of Quality and Academic Accreditation
2019 - Present	**Supervisor**, Department of the University's Portal

I served as a member of the following committees in the Faculty of Computer Science and Information Technology (FCSIT) at Al-Baha University:

2020 - 2021	**Head**, Committee of Graduate Studies and Scientific Research
2019 - 2020	**Head**, Committee of Final Year Projects
2018 - 2020	**Head**, Unit of External and Internal Equivalencies
2018 - 2019	**Member**, Committee of Final Year Projects
2018 - 2019	**Member**, Committee of Higher Education and Scientific Research

Research Interests

Network and information security
Security prespectives in emergent networks: IoT, VANET, MANET & FANET.
Mobility optimization in Wireless Sensors Networks
Energy efficient data collection protocols in Wireless Sensors Networks
Machine learning algorithms and applications in communication networks
Fuzzy logic algorithms and applications in communication networks
Meta-heuristic algorithms and applications in communication networks

Scholarships and Awards

Nov 2013	PhD Scholarship, Al-Baha University, Saudi Arabia (4 Years)
July 2013	ENGM Department Fund, Dalhousie University, Canada
Jan 2013	PhD Scholarship, King Abdullah Scholarship Program, Saudi Arabia
July 2012	Excellency Award, Saudi Cultural Bureau in Canada
Mar 2009	Masters Scholarship, King Abdullah Scholarship Program, Saudi Arabia (3 Years)

THESES

PhD Thesis

A. Alomari, 'Path planning models for mobile anchor-assisted localization in wireless sensor networks', Dalhousie University, 2018.

MSc Thesis

A. Alomari, 'Energy efficient data collection scheme using rendezvous points and mobile actor in wireless sensor networks', Dalhousie University, 2012.

PUBLICATION LIST

Journal Articles

M. Hassan, N. Tariq, A. Alsirhani, **A. Alomari**, F. A. Khan, M. M. Alshahrani, M. Humayun, "GITM: A GINI Index-Based Trust Mechanism to Mitigate and Isolate Sybil Attack in RPL-Enabled Smart Grid Advanced Metering Infrastructures," in *IEEE Access*, vol. 11, pp. 62697-62720, 2023, doi: 10.1109/ACCESS.2023.3286536.

A. Alomari, "Meta-heuristic-based guidance model for node localization in wireless sensor networks," *Computers and Electrical Engineering*, vol. 104, p. 108437, 2022.

F. Khan, **A. Alomari** *et al.*, "Development of a Model for Spoofing Attacks in Internet of Things," *Mathematics*, vol. 10, no. 19, p. 3686, Oct. 2022, doi: 10.3390/math10193686.

I. Ullah, **A. Alomari** *et al.*, "Certificate-Based Signcryption Scheme for Securing Wireless Communication in Industrial Internet of Things," *IEEE Access*, vol. 10, pp. 105182-105194, 2022, doi: 10.1109/ACCESS.2022.3211257.

A. Bhardwaj, K. Kaushik, **A. Alomari**, A. Alsirhani, M. M. Alshahrani, and S. Bharany, "BTH: Behavior-Based Structured Threat Hunting Framework to Analyze and Detect Advanced Adversaries," *Electronics*, vol. 11, no. 19, p. 2992, Sep. 2022, doi: 10.3390/electronics11192992.

S. Javed, **A. Alomari** *et al.*, "An Efficient Authentication Scheme Using Blockchain as a Certificate Authority for the Internet of Drones," *Drones*, vol. 6, no. 10, p. 264, Sep. 2022, doi: 10.3390/drones6100264.

S. Kaushik, A. Bhardwaj, **A. Alomari**, S. Bharany, A. Alsirhani, and M. Mujib Alshahrani, "Efficient, Lightweight Cyber Intrusion Detection System for IoT Ecosystems Using MI2G Algorithm," *Computers*, vol. 11, no. 10, p. 142, Sep. 2022, doi: 10.3390/computers11100142.

F. Ullah, A. Alsirhani, M. M. Alshahrani, **A. Alomari**, H. Naeem, and S. A. Shah, "Explainable Malware Detection System Using Transformers-Based Transfer Learning and Multi-Model Visual Representation," *Sensors*, vol. 22, no. 18, p. 6766, Sep. 2022, doi: 10.3390/s22186766.

H. Naeem, A. Alsirhani, M. M. Alshahrani, and **A. Alomari**, "Android Device Malware Classification Framework using multistep image feature extraction and Multihead Deep Neural Ensemble," *Traitement du Signal*, vol. 39, no. 3, pp. 991–1003, 2022.

A. Zia, M. Alzahrani, **A. Alomari**, and F. AlGhamdi, "Investigating the Drivers of Sustainable Consumption and Their Impact on Online Purchase Intentions for Agricultural Products," *Sustainability*, vol. 14, no. 11, p. 6563, May 2022, doi: 10.3390/su14116563.

A. Alsirhani, M. A. Khan, **A. Alomari**, S. Maryam, A. Younas, M. Iqbal, M. H. Siqqidi, A. Ali "Securing Low-Power Blockchain-Enabled IoT Devices Against Energy Depletion Attack", *ACM Transactions on Internet Technology (TOIT),* 2022. doi: 10.1145/3511903

I. Ullah, **A. Alomari**, N. Ul Amin, M. Asghar Khan, H. Khattak "An Energy Efficient and Formally Secured Certificate-Based Signcryption for Wireless Body Area Networks with the Internet of Things", *Electronics,* vol. 8, no. 10, 1171, 2019. doi:10.3390/electronics8101171

A. Alomari, W. Phillips, N. Aslam, and F. Comeau, "Swarm Intelligence Optimization Techniques for Obstacle-Avoidance Mobility-Assisted Localization in Wireless Sensor Networks", *IEEE Access,* vol. 6, pp. 22368-22385, 2018. doi: 10.1109/ACCESS.2017.2787140

A. Alomari, W. Phillips, N. Aslam, and F. Comeau, "Dynamic Fuzzy-Logic Based Path Planning for Mobility-Assisted Localization in Wireless Sensor Networks", *Sensors,* vol. 17, no. 8, 1904, 2017. doi:10.3390/s17081904

A. Alomari, F. Comeau, W. Phillips, and N. Aslam, "New Path Planning Model for Mobile Anchor-Assisted Localization in Wireless Sensor Networks", *Wireless Networks,* vol. 24, pp. 2589-2607, 2018. doi:10.1007/s11276-017-1493-2.

Conference Papers

A. Alomari, "Population-based Optimization Model for Energy-Efficient Cluster Formation in Wireless Sensor Networks", in *2nd International Conference on Smart City and Green Energy*, Hong Kong, 2023, pp. 1-5.

A. Alomari, N. Aslam, W. Phillips, and F. Comeau, "Three-dimensional path planning model for mobile anchor-assisted localization in wireless sensor networks", in *2017 IEEE Canadian Conference on Electrical and Computer Engineering (CCECE)*, Windsor, ON, Canada, 2017, pp. 1-5. doi: 10.1109/CCECE.2017.7946681

A. Alomari, N. Aslam, W. Phillips, and F. Comeau, " Using dv-hop technique to increase localization ratio in static path planning models in wireless sensor network", in *2016 International Symposium on Communication Systems, Networks and Digital Signal Processing (CSNDSP)*, Prague, Czech Republic, 2016, pp. 1-6. doi: 10.1109/csndsp.2016.7574010

A. Alomari, N. Aslam, W. Phillips, and F. Comeau, " A scheme for using closest rendezvous points and Mobile Elements for data gathering in wireless sensor networks", in *2014 IFIP Wireless Days (WD),* Rio de Janeiro, Brazil, 2016, pp. 1-6. doi: 10.1109/wd.2014.7020793.

A. Alomari, N. Aslam, and F. Comeau, " Data collection using rendezvous points and mobile actor in wireless sensor networks", in *2012 IEEE International Conference on Communications (ICC),* Ottawa, ON, Canada, 2012, pp. 7115-7119 doi: 10.1109/icc.2012.6364936.

Graduate Students Supervision

Amal Alfgeeh	A Machine Learning Based Model for Malware Detection
Yusra Alzahrani	An Efficient Model for DDoS Attacks Detection Using Machine and Deep Learning
Johra Alghamdi	An Integrated Deep Neural Network Hierarchy Model for Cyberattack Detection in the Internet of Things
Wejdan Alghamdi	A Machine Learning Based Model for exhaustion Attack in Wireless Sensor Networks
Jamilah Alghamdi	Deep Learning Approaches for Detecting DDoS Attacks in Cloud Computing Environment

Teaching

CYBS-60311	Risk Management in Cybersecurity
CYBS-60203	Network Security
CYBS-60102	Introduction to Cryptography
4101-1153	Introduction to Communication & Information Technology
4101-1151	Programming Basics
4101-0132	Probability and Statistics
4101-1412	Parallel and Distributed Computing
4101-1425	Mobile Computing and Applications
4101-1427	Robotics
4101-1402	Network Administration
4101-1411	CS Senior Project I
4101-1421	CS Senior Project II

Proffisional Activities

I am a member of the following organizations:

2013 - Present	IANG, Member
2010 - Present	IEEE, Member
2010 - Present	IEEE ComSoc, Member
2010 - Present	ACM, Member

I also regularly review (mainly Communication Networks-related papers) for several international journals and conferences including

TPC Member, 2019 International conference on Computer Applications & Information & Security, (ICCAIS)
TPC Member, 12th International Conference on Software, Knowledge, Information Management & Applications (SKIMA 2018)
Reviewer, 2017 IEEE Canadian Conference on Electrical and Computer Engineering (CCECE)
Reviewer, IEEE Access (IEEE)
Reviewer, Sensors Letters (IEEE)
Reviewer, Sensors Journal (IEEE)
Reviewer, Sensors (MDPI)
Reviewer, Applied Science (MDPI)
Reviewer, Electronics (MDPI)
Reviewer, International Journal of Electronics (Taylor and Francis)
Reviewer, Journal of King Saud University - Computer and Information Sciences (Elsevier)
Reviewer, Transactions on Mobile Computing (IEEE)
Reviewer, Wireless Networks (Springer)
Reviewer, IEEE Transactions on Mobile Computing (IEEE)

Languages

Arabic:	Mothertongue
English:	Proficient

Technical Expertise

Certificates	Cisco Certified Network Associate - Routing and Switching (CCNA - R & S)
Languages	Python, HTML
Simulation and Tools	Matlab, Minitab, Latex
Protocols	IP, TCP, UDP, IPSec, IGMP
Operating Systems	Windows, Macintosh, Cisco IOS

References

1. **Dr. William Phillips**
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2. **Dr. Nauman Aslam**
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