

Abdulaziz Alshaeri

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Education

University of Maryland, Baltimore County

Baltimore, MD

Department Computer Science and Electrical Engineering

August 2019 – May 2024

- Awarded Ph.D. degree in Computer Sciences

George Washington University

Washington, DC

Department of Computer Science

January 2016 - January 2018

- Awarded MS degree in Computer Science

King Khalid University

Abha, Saudi Arabia

College of Computer Science

June 2008 - August 2012

- Awarded Bachelor of Science degree in Computer Science
- Awarded a fully-funded scholarship to pursue Master's and Ph.D. degrees in Computer Science

University of Pennsylvania

Philadelphia, PA

English Language Program (ELP)

August 2013 - December 2014

- Intensive academic English language program for graduate studies

Experience

Research Experience

- Conducted research on developing distributed unclonable hardware-assisted protocol for mutual authentication and key agreement in Internet of Things (IoT): proposing Physically Unclonable Function (PUF)-based authentication and key agreement protocol to enable continuous authentication and secure session between IoT devices.
- Conducted research on preserving privacy in Intelligent Transportation Systems (ITS): proposing a cost-efficient pseudonym scheme in which we address and tackle trajectory tracking attacks on vehicular communication systems.
- Conducted research on secure and privacy-aware Intelligent Transportation Systems (ITS): proposing a cost-efficient and distributed authentication and message verification for ITS users in an as-a-service fashion in which we address and tackle three key challenges: authentication, privacy, and secure message dissemination, in the realm of safety-critical ITS applications.
- Conducted research about energy trading scheme for dynamic charging of Electric Vehicles (EVs): proposing a decentralized energy trading scheme based on blockchain technology to allow EVs to select optimal offers to replenish their energy supply and hence designing lightweight, yet effective, protocols for the authentication of EV-to-Charging-Pads in the dynamic contactless charging mechanism which utilizes electromagnetic induction to emit energy to EV to charge its battery on the move
- Conducted research about securing remote access to On-Board Diagnostic (OBD) systems: proposing a case study to enable transportation and environmental authorities to inspect emissions of vehicles remotely,

instead of visiting physical stations, by accessing their OBD systems wirelessly; hence, designing lightweight, yet effective, protocols for securely accessing OBD-II dongles wirelessly by authority through the drivers' smart phones that act as fog nodes

Publications

- A. Alshaeri and M. Younis, "Efficient Distributed Authentication for Intelligent Transportation Systems Using Mobile Devices," in *IEEE Transactions on Intelligent Transportation Systems*, vol. 25, no. 8, pp. 8865-8880, Aug. 2024, doi: 10.1109/TITS.2024.3376517. (Impact factor: 8.5)
- A. Alshaeri and M. Younis, "Distributed Hardware-Assisted Authentication and Key Agreement Protocol for Internet of Things," *2024 IEEE 21st Consumer Communications & Networking Conference (CCNC)*, Las Vegas, NV, USA, 2024, pp. 152-158, doi: 10.1109/CCNC51664.2024.10454706.
- M. Ebrahimabadi, M. Younis, W. Lalouani, A. Alshaeri and N. Karimi, "SWeeT: Security Protocol for Wearables Embedded Devices' Data Transmission," *2022 IEEE International Conference on E-health Networking, Application & Services (HealthCom)*, 2022, pp. 135-141, doi: 10.1109/HealthCom54947.2022.9982744.
- A. Alshaeri and M. Younis, "Protocols for Secure Remote Access to Vehicle Onboard Diagnostic Systems in Smart Cities," in *IEEE Intelligent Transportation Systems Magazine*, vol. 14, no. 5, pp. 209-221, Sept.-Oct. 2022, doi: 10.1109/MITS.2022.3180688. (Impact factor: 5.293; Acceptance rate: 23%)
- A. Alshaeri and M. Younis, "Lightweight Authentication and Authorization Protocol for Dynamic Charging of Electric Vehicles," *2022 IEEE 19th Annual Consumer Communications & Networking Conference (CCNC)*, 2022, pp. 550-556, doi: 10.1109/CCNC49033.2022.9700662.
- A. Alshaeri and M. Younis, "A Blockchain-based Energy Trading Scheme for Dynamic Charging of Electric Vehicles," *2021 IEEE Global Communications Conference (GLOBECOM)*, 2021, pp. 01-06, doi: 10.1109/GLOBECOM46510.2021.9685296.

Work Experience

- Lecturer

February 2013 – Present

- *The College of Art and Science at Tanumah, King Khalid University, Saudi Arabia*

Skills

Computer and Programming Skills:

- *C++, JAVA, Python, Golang, Prolog, R, HTML, SQL, MySQL, Microsoft Office*

Languages:

- *Arabic- native*
- *English- fluent*