



### **Bio:**

AbedlRahman Almodawar is a Ph.D. candidate in the Computer Science Department at Princess Sumaya University for Technology, Jordan, where he began his doctoral studies in 2021. He earned his B.Sc. in Computer Science from Al-Balqa Applied University, Jordan, in 2010 and his M.Sc. in Computer Science from Jordan University of Science and Technology, Jordan, in 2013. With over 14 years of experience in higher education, he has worked as a full-time lecturer at Granada Intermediate University College since 2011 until he joined Jordan University of Science and Technology in 2014. His research interests focus on Artificial Intelligence, Cloud and Edge computing (IoT), and Cybersecurity.

### **Published Papers:**

- Ghnemmat R, **Almodawar A**, Al Saraireh J. Scalable model for segmenting Cells' Nuclei using the U-NET architecture. Multimedia Tools and Applications. 2024 Jul;83(23):63655-78.
- Mardini W, Khamayseh Y, **Almodawar A**, Elmallah E. Adaptive RSSI-based localization scheme for wireless sensor networks. Peer-to-Peer Networking and Applications. 2016 Nov;9:991-1004.
- Al-Badarneh A, Najadat H, Abdulla N, **Almodawar A**, Mohsen G. A Survey of Indexing Schemes in Cloud Data Management. In 2016 7th International Conference on Computer Science and Information Technology (CSIT) 2016 Jul 1 (pp. 1-6). IEEE.
- Halima NB, Khamayseh Y, Mardini W, **Almodawar A**. Empirical Experiments for Sensors' Distance Estimation in Smart Places. In 2015 IEEE International Conference on Computer and Information Technology; Ubiquitous Computing and Communications; Dependable, Autonomic and Secure Computing; Pervasive Intelligence and Computing 2015 Oct 26 (pp. 1614-1619). IEEE.

- Hmeidi I, Al-Ayyoub M, Abdulla NA, **Almodawar A**, Abooraig R, Mahyoub NA. Automatic Arabic text categorization: A comprehensive comparative study. Journal of Information Science. 2015 Feb;41(1):114-24.
- Hmeidi I, Shehadeh HA, **Almodawar A**, Daraghme M. Comprehensive Study on Information Retrieval: Arabic Document Indexing. Research Journal of Science and Technology. 2014;6(2):79-86.
- **Almodawar A**, Al-Ayyoub M, Mohammad S. Security-aware placement and migration algorithm in iaas interclouds. In The fourth international conference on information and communication systems (ICICS 2013) 2013.

#### **Accepted papers:**

- **(First Author)** Enhancing Machine Learning-based Anomaly Detection for IoT Networks. The 16th International Conference on Information and Communication Systems (ICICS 2025 conference). 1-3 July 2025 | Irbid, Jordan.
- **(First Author)** PSNR-based Adaptive image padding for image classification-specific tasks. The International Conference on Cybersecurity and AI-Based Systems (Cyber-AI 2025), 1–4 September 2025 | Varna, Bulgaria.

#### **Submitted Papers**

- **(First Author)** Multi-Layer Grad-CAM (MLGC) Explainable AI model for Texture Prediction. The International Conference on Cybersecurity and AI-Based Systems (Cyber-AI 2025), 1–4 September 2025 | Varna, Bulgaria.
- **(First Author)** Enhancing Image Classification through Adaptive Image Resizing. The International Conference on Cybersecurity and AI-Based Systems (Cyber-AI 2025), 1–4 September 2025 | Varna, Bulgaria.

#### **To be submitted during 2025: (Journal submission)**

- **(First Author)** Wrapper-based Feature Selection over clustered features for High-Dimensional Datasets.
- **(First Author)** Routing and Broadcasting Algorithms for the Diamond Hypercube Interconnection Network.
- **(First Author)** Lightweight Image Encryption with Confusion and DNA-based Diffusion in CTR mode.
- **(First Author)** Enhancing Resiliency of Encryption Algorithms Against Profiled Side-Channel Attacks.
- **(First Author)** Classification of different VPN protocols in modern network traffic using Scalable LSTM.

**Working on:** (Journal submission: IEEE Communications Surveys & Tutorials)

- **(First Author)** Edge Intelligence for Localization: A Comprehensive Survey.

**Projects:**

I am working as a team member with **Professor Sufyan Almajali** (*PSUT, Amman*), **Professor Mousa Ayyash** (*Chicago State University, USA*), and **Dr. Anand Singh** (*PDEU, Gandhinagar, Gujarat, India*) on the **CARNATIONS** project. CARNATIONS is a U.S. Department of Transportation (USDOT) Tier-1 University Transportation Center (UTC) that addresses the growing cyber-physical risks impacting Positioning, Navigation, and Timing (PNT) in transportation. CARNATIONS focuses on Resilient PNT (R-PNT) and vehicle-to-everything (V2X) communications for all surface transportation modes.

**Project Title:** Improving GNSS Resiliency Using Edge AI Solutions.

**Project description:** Improving the resilience of Global Navigation Satellite Systems (GNSS) is crucial, especially in challenging environments where global positioning systems (GPS) signals can be weak or disrupted. Enabling Edge Artificial Intelligence (Edge AI) offers promising solutions that employ AI algorithms and models on edge devices without constant reliance on cloud infrastructures, especially in highly dense blockage environments, is an interesting area of research. Our strategy will explore how Edge AI can enhance GNSS resiliency in challenging scenarios by bringing intelligence to the edge node.

**Full details:**<https://www.iitcarnations.org/improving-gnss-resiliency-using-edge-ai>

**Other activities:**

- **Team Supervisor** in the IEEE Jordan AI Modeling Hackathon 1.0 contest, 28 May 2025. <https://jordan.ieee.org/ai-modeling-hackathon-1-0/>

- **PC member and reviewer**
  - **ICICS 2025 - [PC member \(AI and Machine Learning\)](#) in the 16th International Conference on Information and Communication Systems (ICICS 2025 conference). 1-3 July 2025 | Irbid, Jordan.**
  - **ICICS2015 - [PC member](#)**
  - **ICICS 2014 - [External reviewer](#)**
  - **ICICS 2013 - [External reviewer](#)**