

HEBA Z ALAWNEH

Assistant Professor at Al-Hussein Technical University

@ hebahalawneh992@gmail.com

Amman, Jordan

github.com/hebaala

in linkedin.com/in/hz-alawneh

EDUCATION

Ph.D. in Computer Science & Software Engineering

Auburn University

May 2016 – Aug 2020 – GPA: 3.73

Dissertation title: **Android Malware Detection Using Data Mining Techniques on Process Control Block Information.**

M.Sc. in Computer Science & Software Engineering

Auburn University

May 2016 – 2018 – GPA: 3.77

B.Sc. in Computer Engineering

Jordan University of Science and Technology

Aug 2010 – Jun 2015 – GPA: 82%

EXPERIENCE

Assistant Professor - Cybersecurity Department

Jordan University of Science and Technology

October 2023 – present Irbid, Jordan

Assistant Professor - Cybersecurity Department

Al Hussein Technical University (HTU)

October 2022 – 2023 Amman, Jordan

- Teaching:** Principles of Data Science, Data Structures and Algorithms, Principles of Information Security.
- Research Experience:** Deep-Learning-based component-level power consumption prediction of cloud data centers. Discovering and Exploiting 3D-printers vulnerabilities,

Assistant Professor - Computer Engineering Department

Princess Sumaya University (PSUT)

Sep 2020 – Sep 2022 Amman, Jordan

- Teaching:** Computer Architecture, Digital Logic Design, Operating System & Security, Cryptography, Information Security Fundamentals. Student Rating: 86%
- Research Experience:** Machine-Learning based Malware detection using applications network traffic, Deep-Learning-based Image tampering detection, Business Logic vulnerability detection

Graduate Research Assistant

Auburn Cyber Research Center

May 2016 – Aug 2020 Auburn, AL

- Research and develop state-of-the-art techniques in deep learning applied in various real-world security applications.

SKILLS

Linux Windows Android

Python C/C++ C# Java JavaScript SQL

ARM & x86 Assembly Tensorflow

AWS SageMaker S3 EC2 RDS Lambda

Operating System Security Deep Learning

Adversarial Machine Learning Data Mining

Software Development Mobile Development

Process Management Kernel Development

OO Design Cryptography Application Security

Reverse Engineering Parallel Computing

PROJECTS

Traffic-based Android Malware Detection application

A dynamic malware detection application for Android devices. It monitors the traffic of selected applications and uses machine learning to identify malicious traffic with an F1-score of 93.5%.

Data Centers Power Consumption Prediction via Deep-Learning

An RNN-based predictive model of the power consumption of servers in data centers.

Android Malware Detection Using Deep Learning Techniques on Process Control Block (PCB) Information

A dynamic malware detection approach using deep learning techniques on the PCB information mined over time. The detection model that combines CNN, LSTM, and DNN achieved an F1-score of 95.8% using 12 PCBs.

Automation of Extracting Decision Rules from E-commerce Web Applications

A framework to extract decision business rules from E-commerce web applications without prior knowledge of their implemented business rules. The proposed solution adapt process mining and machine learning techniques to extract candidate decision business rules of a web application based on its dynamic behavior when in use. Technologies: Process Mining, Machine Learning, Burp Suite Extender, Java, SQLite.

PUBLICATIONS & PRESENTATIONS

- Alawneh. H. et al., Android Malware Detection Using Deep Learning on Process Control Block information. In Press.
- Altaher, A., Alawneh, H., Design and Implementation of a Malware Detection Tool Using Network Traffic Analysis in Android-Based Devices. Accepted in 2023 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT).
- Alawneh, H., Umphress, D., & Skjellum, A. (2019). Android Malware Detection using Neural Networks & Process Control Block Information. In 2019 14th International Conference on Malicious and Unwanted Software (MALWARE) (pp. 3-12).
- Alkofahi, H., Umphress, D., & Alawneh, H. (2022, June). Preparing HTTP traffic for process mining. In 2022 13th International Conference on Information and Communication Systems (ICICS) (pp. 142-148). IEEE.
- Alkofahi, H., Umphress, D., & Alawneh, H. (2022, November). Discovering Conditional Business Rules in Web Applications Using Process Mining. In Information Integration and Web Intelligence: 24th International Conference, iiWAS 2022, Virtual Event, November 28–30, 2022, Proceedings (pp. 90-97). Cham: Springer Nature Switzerland.
- Alkofahi, H., Umphress, D., & Alawneh, H. (2022, November). Discovering Authorization Business Rules toward Detecting Web Applications Logic Flaws. In 2022 International Arab Conference on Information Technology (ACIT) (pp. 1-7). IEEE.
- Alawneh, Heba (2020). "Android Malware Detection Using Data Mining Techniques on Process Control Block Information". PhD dissertation. Auburn University.
- Leatherland, Terryetal.(2016). "Accelerating Machine Learning for Malware with IBM POWER8 and GP-GPU Acceleration". In: Presentation. IBM.Edge2016 The Premier IT Infrastructure Conference.

LANGUAGES

Arabic
English

