Adel ElZemity

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Tier 4 UK Visa

Education

2023 – present
Canterbury, UK
University of Kent, *Ph.D. in Computer Science*
IoT intrusion detection, classification, and prevention using Federated Learning - Working as a Teaching Assistant.

2018 – 2023
Giza, Egypt
Nile University, *Bachelor's of Science in Computer Engineering*
GPA: 3.9/4.0 | Honors: President's List, Dean's List | Full Scholarship

08/2021 – 12/2021
Fayetteville, NC, USA
Fayetteville State University,
Computer Engineering - Exchange Semester (Global UGRAD)
GPA: 4.00/4.00 | Honors: President's List | Full-Merit scholarship

02/2021 – 07/2021
Riga, Latvia
Riga Technical University,
Computer Engineering - Exchange Semester (Erasmus+)
GPA: 4.00/4.00 | Honors: President's List | Full-Merit scholarship

Publications

Privacy Threats and Countermeasures in Federated Learning for Internet of Things: A Systematic Review
A. ElZemity, B. Arief, paper is accepted for publication at the International Workshop on Emerging Technology in IoT, held in conjunction with the 2024 IEEE International Conference on Internet of Things (iThings-2024), 19-22 August 2024.

A Transformer-Based Deep Learning Architecture for Accurate Intracranial Hemorrhage Detection and Classification
ElZemity, A., et al. 2023 International Conference on Innovation and Intelligence for Informatics, Computing, and Technologies (3ICT). IEEE, 2023.

A Comparative Analysis of Time Series Transformers and Alternative Deep Learning Models for SSVEP Classification
Ali, H., **ElZemity, A.**, Oghostinos, A. E., & Selim, S. (2023, November). In International Conference on Model and Data Engineering (pp. 3-16). Cham: Springer Nature Switzerland.

Interfacial Modification of Perovskite Solar Cell Using ZnO Electron Injection Layer with PDMS as Antireflective Coating
M. K. Othman et al. 2019 Novel Intelligent and Leading Emerging Sciences Conference (NILES) pp. 209-213, doi: 10.1109/NILES.2019.8909336.

Wastewater Treatment Model with Smart Irrigation Utilizing PID Control
A. ELZemity et al. 2020 2nd Novel Intelligent and Leading Emerging Sciences Conference (NILES)pp. 374-379, doi: 10.1109/NILES50944.2020.9257882

Professional Experience

09/2023 – present
Canterbury, UK
Graduate Teaching Assistant, *University of Kent*
- Facilitated class discussions for **Privacy (COMP8240)** and **Computer Security (COMP8760), Information Security Management (COMP6644--8340)**, ensuring active student engagement and comprehension.
- Assisted in grading assignments, providing constructive feedback to students, and contributed to the preparation of course materials for these Masters level courses.

09/2023 – present

Research Assistant

Developing light-weight Machine Learning to counter threats of ransomware attacks in IoT as part of the "Countering HArms caused by Ransomware on the Internet of Things (CHARIOT) " project, in collaboration with my Ph.D. supervisor, Dr Budi Arief, Dr George Oikonomou, Dr James Pope, Dr Calvin Brierley, Dr Yuxiang Huang.

01/2022 – 05/2023
Madrid, Spain

Machine Learning Engineer, *National Cancer Research Center*

- Applied Machine Learning techniques to detect metal binding sites in proteomes under the supervision of Dr. Michael Tress and Dr. Fernando Pozo.
- Participated in the UniProt Machine Learning challenge 2022, showcasing skills in data analysis and model building.
- Successfully created a robust pipeline for exploring, cleaning, and filtering datasets to improve accuracy and efficiency, resulting in a 20% improvement in data processing time.

08/2021 – 01/2022
Fayetteville, NC, USA

Software Engineer, *Intelligent Systems Lab (ISL)*

- Successfully developed a multi-robot system under the supervision of NASA to support lunar exploration, which received funding for implementation.
- Applied expertise in deep learning to design and implement an architecture that effectively segmented the live feed of the robot's ZED Camera, improving the efficiency of object detection on the moon by 2%.
- Demonstrated proficiency in hardware configuration using RaspberryPi and Jetson Nano, and software development with ROS and Python to enhance the capabilities of the multi-robot system for mission critical tasks.

03/2020 – 07/2021
Cairo, Egypt

Data Analyst, *Badawy&Partners Firm*

- Conducted in-depth analysis of over 50 data sheets, with thousands of records, using statistical techniques to provide detailed reports for senior management. This contributed significantly to improving the decision-making process, resulting in a 30% increase in revenue for the company.
- Implemented more than 200 complex queries for the business team in the databases of multiple partner companies. This enhanced the accuracy and efficiency of the system, resulting in a 50% reduction in processing time and a 20% increase in customer satisfaction.
- Utilized data analytics tools to identify, analyze, and interpret trends or patterns in complex data sets that contributed to generating 500K EGP in revenue for the company. This valuable insight provided a competitive edge and helped the company to stay ahead of market trends.

Skills

Good Knowledge

- Proficient in programming languages such as Python, C++, and JavaScript, with strong knowledge of object-oriented programming (OOP) and data structures.
- Strong problem-solving skills and ability to develop efficient algorithms and perform complexity analysis.
- Experience with version control tools like Git and agile methodologies like Scrum.
- Expertise in data analysis and visualization using Python libraries like Scikit-learn and advanced techniques such as regression and classification.

Fair Knowledge

- Familiarity with web development technologies such as HTML5, CSS, and MySQL for database operations.
- Understanding of machine learning concepts, including TensorFlow, convolutional neural networks (CNNs), natural language processing (NLP), and computer vision.
- Proficiency in algorithm design and ability to apply machine learning models to complex datasets.
- Knowledge of deep learning techniques and their applications in image and language processing.

Languages

Arabic ● ● ● ● ●

English ● ● ● ● ●

German ● ● ● ○ ○