Hamad H. Alsheraifi

Associate Researcher at TTI

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Education

U.A.E. University (UAEU) — Al Ain, Abu Dhabi
B.Sc. Computer Engineering — *May 2021*

Technical Proficiency

Programming Languages

Python, C++, Julia

Data Science & Machine Learning

- Algorithms: Regression, Classification, Time Series Analysis/Forecasting
- Processes: Data Pre-processing, Feature Engineering, Hyperparameter Tuning
- Tools: Scikit-Learn, Pandas, Numpy, Matplotlib, Seaborn, Flux.jl, PyTorch
- Advanced Libraries: CatBoost, XGBoost, Darts, Statsmodels, SDV

Software & Tools

- IDEs: Jupyter, Kaggle, Google Colab
- Others: LaTeX, Linux Command Line, Arduino

Domain Knowledge

Radar Technology

- Introduction to radar system fundamentals, including signal processing and radar data analysis.
- Application of software development practices in enhancing radar system functionality and performance.
- Utilization of data science techniques for the analysis of radar-generated data, focusing on target classification.

Bioinformatics

- Applications: Genotype-phenotype analysis, GWAS for SNP extraction
- Data Management: Cohorting, Stratification, Quality Control (e.g., LD Pruning, HWE)

Research Experience

Associate Researcher

Tawazun Technology & Innovation (TTI), *August 2023 – Present*
Since joining the Radar & EW department, I have been engaged in software development projects aimed at improving radar system operations and efficiency. My contributions include:

- Developing and optimizing software tools that interface with radar systems to enhance data acquisition and processing, such as building a simulation that reads input signals and use this data to classify them via machine learning.
- Collaborating with the engineering team to integrate new software solutions, leading to more accurate and reliable radar performance.

Research Assistant

Center for Biotechnology (BTC), Khalifa University (KU), *September 2022 – July 2023*
I conducted time series analysis on clinical and wastewater SARS-CoV-2 RNA samples to identify trends and correlations in virus spread, utilizing machine learning for trend prediction.

GANs Research Project

Emirates ICT Innovation Center, KU, *July 2022 – October 2022*
I played a pivotal role in developing and implementing a GAN model alongside a Random Forest classifier for system calls analysis, leading to key insights and optimizations. My contributions spanned from literature review to testing and were instrumental in producing a research paper that demonstrated our approach's effectiveness

On-Board Computer Simulation

National Space Science & Technology Center, UAEU, *January 2021 – April 2021*
Developed a Python and Arduino-based desktop-GUI for OBC simulation, accurately replicating satellite telecommand and telemetry via UART. This software became a vital tool for the team's satellite communication protocols.

Scooter Incident Reporting System

College of Information Technology, UAEU, *January 2020 – December 2020*
Contributed technically and academically to my undergraduate project, focusing on algorithm configuration for IoT connectivity. Led the design of a presentation poster for the final defense, earning team recognition. .

Teaching Experience

Peer Tutor, Tutorial Center (UAEU)

Fall 2017
Assisted students in English language mainly in Speaking, Writing, and Grammar.

Honors and Awards

- Al-Nokhba Program Member *June 2022 – July 2023*
- Invited Paper at IEEE BigData 2022 *August 2022*

- Winner of Fall 2020 Best Senior Project Contest UAEU, *Fall 2020*
- Dean's List *2018-2020*

Publications

1. "Long-Term Study on Wastewater SARS-CoV-2 Surveillance Across United Arab Emirates"
   Science of the Total Environment *Published*
2. "Using Generative Adversarial Networks to Simulate System Calls of Malicious Android Processes"
   IEEE BigData 2022 *Published*

Volunteering and Extracurricular Activities

- Participated in the UAEU SIP event "Coronavirus Awareness Contest" as a web-dev participant, March 22, 2020.
- Volunteered at UAEU's Sports Complex in organizing and managing chess tournaments, Fall 2017 – Fall 2019.
- Volunteered in the University Health Promotion Program: Students' Needs Assessment at UAEU, February 2019.
- Attended the IEEE 13th International Conference on Innovations in Information Technology, November 2018.
- Volunteered at a veterinary clinic for a research project, March – April 2018.
- Participated in the 4th UAEU Annual Undergraduate Student Research Conference 2018.