

# Hamad H. Alsheraifi

*Associate Researcher at TTI*

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## Education

U.A.E. University (UAEU)  
B.Sc. Computer Engineering

Al Ain, Abu Dhabi  
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
- Version Control: Git
- 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.
- Collaborating with the engineering team to integrate new software solutions, leading to more accurate and reliable radar performance.

### **Research Assistant - Al-Nokhba Program**

*Center for Biotechnology (BTC), Khalifa University (KU)*

*September 2022 – July 2023*

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 - Al-Nokhba Program**

*Emirates ICT Innovation Center (EBTIC), KU*

*July 2022 – October 2022*

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.

### **On-Board Computer Simulation**

*National Space Science & Technology Center (NSSTC), UAEU*

*January 2021 – April 2021*

Developed a Python and Arduino-based desktop-GUI for OBC simulation, accurately replicating satellite telecommand and telemetry via UART.

### **Scooter Incident Reporting System**

*College of Information Technology (CIT), UAEU*

*January 2020 – December 2020*

Contributed technically and academically to my undergraduate project, focusing on algorithm configuration for IoT connectivity.

## **Teaching Experience**

### **Peer Tutor, Tutorial Center (UAEU)**

Fall 2017

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

## **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*

## **Honors and Awards**

- **Al-Nokhba Program Member (June 2022 – July 2023):** Selected for UAE national service research program at KU, one of 32 in the 17th Batch.
- **Invited Paper at IEEE BigData 2022 (August 2022):** Led the development of a high-performing tabular-based GAN model for classification and authored the paper, leading to an invitation to present at IEEE BigData 2022.
- **Winner of Fall 2020 Best Senior Project Contest, UAEU:** Secured first place among 39, demonstrating exceptional teamwork and research capability.

- **Dean's List (2018-2020):** Consistently attained a GPA above 3.6.

## 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.