

# Ahmed Radwan

## Computer Science

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### PROFILE

Computer Scientist with expertise in AI, Computer Vision, and NLP and a proven track record of leading innovative projects in wireless communication and real-time systems. Dedicated to advancing knowledge through continuous learning and empowering others through mentorship.

### EDUCATION

#### M.Sc Computer Science

York University

4.0/4.0 GPA.

09/2024 – Present  
Toronto, Canada

#### B.Sc Computer Science

King Abdulaziz University

4.98/5.0 GPA

2019 – 06/2024

### WORK EXPERIENCE

#### Research Assistant

York University

LE-NGWN Lab, under Prof. Hina Tabassum

- Conducted research on self-supervised learning for Wi-Fi sensing, focusing on Domain Adaptation and Generalization of AI.

09/2024 – Present  
Toronto, Canada

#### Research Engineer

Asas.ai

- Developed LLM-based applications for Arabic language processing, focusing on enhancing instruction-tuning datasets.
- Conducted comprehensive reviews and analyses to improve model performance and efficiency.

09/2023 – Present

#### Research Engineer

King Abdullah University of Science and Technology (KAUST)

Information Science Lab, under Prof. Tareq Y. Al-Naffouri

- Designed a real-time feedback algorithm for tracking Rak'ah completion during Salah using smartphone IMU sensors.
- Processed and classified motion data using Python and TensorFlow, achieving high accuracy in real-time activity recognition.
- Deployed an Android app for accurate real-time tracking and error detection.

05/2024 – 08/2024

#### Research Assistant

King Abdullah University of Science and Technology (KAUST)

Communication Theory Lab, under Prof. Mohamed-Slim Alouini

- Optimized energy-efficient AI models using quantization, reducing computation and transmission overhead.
- Analyzed centralized, federated, and split learning for scalable, privacy-preserving NLP sentiment classification.
- Enhanced model robustness for deployment in noisy wireless environments.

02/2024 – 10/2024

#### Leader of AI Unit

Drone and Robotics Aziz Group at KAU

- Managed a team of 50 members, overseeing their training and preparing them for hackathons and competitions.
- Taught Introduction to AI, Computer Vision, and TinyML through hands-on bootcamps.
- Led the AI team for DRAG SUAS 2024, achieving 16th place out of 100 competing teams globally.

09/2023 – 06/2024

#### Artificial Intelligence Intern

King Abdullah University of Science and Technology (KAUST)

- Developed deep learning models such as autoencoders, VAEs, and GANs, focusing on unsupervised and generative modeling.
- Applied reinforcement learning techniques to optimize decision-making policies in dynamic environments.
- Designed and implemented graph neural networks for recommendation systems.
- Researched NLP tasks, focusing on text analysis, sentiment analysis, and language modeling.

07/2023 – 08/2023

## Teaching Assistant

03/2023 – 03/2024

### KAUST Academy

- Assisted in bootcamp and answered questions on advanced AI topics, including CNNs, AutoEncoders, and data augmentation.
- Delivered online lessons on Introduction to AI, Linear Algebra, and Deep Learning, supporting student understanding.

## PUBLICATIONS

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### A Tutorial-cum-Survey on Self-Supervised Learning for Wi-Fi Sensing: Trends, Challenges, and Outlook

*IEEE Communications Surveys and Tutorials* ( Under Review )

First author of a survey exploring SSL for Wi-Fi sensing, focusing on CSI concepts, SSL methods (e.g., SimCLR, VICReg), and challenges in multi-user recognition and cross-domain adaptation.

### Enhancing Wireless Sentiment Classification with TinyML Approaches

( Under Review )

First author of a preprint proposing TinyML approaches like Federated and Split Learning for energy-efficient, privacy-preserving wireless sentiment classification.

### SARD: A Human-AI Collaborative Story Generation [↗](#)

*HCI International 2024*

First author. Led the design, implementation, and user studies of a novel visual interface for AI-assisted story generation.

### Addressing Bias Through Ensemble Learning and Regularized Fine-Tuning [↗](#)

*Preprint*

First author of a preprint introducing a bias reduction method using fine-tuning, ensemble learning, and knowledge distillation, applied to CIFAR-10 and HAM10000.

## PROJECTS

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### ReFAIR Replication Project

Replicated the ReFAIR framework for fairness-aware requirements engineering. Implemented key models, validated reproducibility, and documented findings to support fairness research.

### Compact Multimodal Threat Detection System

Developed a lightweight multimodal system for cyclists, integrating audio-visual data to detect road threats in real time on Arduino.

### PerfectPrayer

Designed and deployed a real-time Rak'ah tracking app for Salah, using IMU sensors for motion recognition and providing real-time accuracy and error feedback.

## COURSES

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### TinyML Course

Thuwal, Jeddah

King Abdullah University of Science and Technology (KAUST) in Collaboration with UNESCO

### Mathematics for Machine Learning and Data Science Specialization [↗](#)

*DeepLearning.AI*

### Machine Learning Specialization [↗](#)

*DeepLearning.AI*

## AWARDS

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### 1st Place Winner – 2024 Student Games [↗](#)

Organized By International Society of Automation and Sponsored by Aramco

Developed "GreenSightAI," an AI-driven system for early crop disease detection, improving yield quality and reducing labor costs.

### 1st Place Winner – Sehah Thon 2 [↗](#)

Ministry of Health with Ministry of Hajj and Umrah

Created an AI system to enhance emergency response through real-time geolocation and individual detection.

## TECHNICAL SKILLS

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### Programming Languages and Libraries

Proficient in Python, Pandas, Scikit-learn, PyTorch, TensorFlow, Keras, NumPy, Matplotlib, Seaborn, Jupyter, and OpenCV.

### Artificial Intelligence and Machine Learning

Expertise in Machine Learning, Deep Learning, Computer Vision, Natural Language Processing (NLP), CNNs, RNNs, Transformers, GANs, Diffusion Models, Large Language Models (LLMs), HuggingFace, and SpaCy.