Ahmed Radwan

Computer Science

✉ ahmedyradwan02@gmail.com   📞 +1 (437) 440-1525   GitHub   in LinkedIn   🔗 Portfolio

PROFILE

I am a computer scientist with expertise in AI, NLP, and backend development. I've led projects in AI for wireless communications and real-time feedback systems. Committed to continuous learning, I also contribute to educational initiatives through teaching and mentorship.

EDUCATION

M.Sc Computer Science   09/2024 – Present
York University   Toronto, Canada

B.Sc Computer Science   2019 – 06/2024
King Abdulaziz University   Jeddah, Saudi Arabia
4.98/5.0 GPA

WORK EXPERIENCE

Researcher Assistant   09/2024 – Present
York University   Toronto, Canada
Research Assistant under Prof. Hina Tabassum at LE-NGWN Lab.
- Working on self-supervised learning for Wi-Fi sensing and diffusion models for RF-Coverage map reconstruction.

Researcher   09/2023 – Present
Asas.ai
- Developed LLM-based applications focused on Arabic language processing.
- Conducted comprehensive review and analysis of Arabic instruction-tuning datasets to improve model performance.

Research Assistant   02/2024 – 10/2024
King Abdullah University of Science and Technology (KAUST)
Research Assistant under Prof. Mohamed-Slim Alouini, Communication Theory Lab
- Optimized energy efficiency in AI tasks using quantization to reduce model complexity and data transmission.
- Analyzed centralized, federated, and split learning methods for NLP sentiment analysis, focusing on performance, privacy, and scalability.
- Led research merging AI with wireless communications, testing models on real-world noisy communication channels.

Researcher under Prof. Tareq Y. Al-Naffouri, Information Science Lab
- Developed a real-time feedback algorithm for tracking Rak'ah completion during Salah using smartphone IMU sensors.
- Processed and classified sensor data for motion recognition.
- Deployed and enhanced an Android app for real-time accuracy and error detection.

Leader of AI Unit   09/2023 – 06/2024
Drone and Robotics Aziz Group at KAU
- Manage a team of 50 members, overseeing their development and preparing them for participation in hackathons.
- Teaching Introduction to AI, Computer Vision, and TinyML bootcamps.
- Led the AI team for DRAG SUAS 2024, achieving a ranking of 16th.

Artificial Intelligence Intern   07/2023 – 08/2023
King Abdullah University of Science and Technology (KAUST)   Thuwal, Saudi Arabia
- Deep Learning: Autoencoders, VAEs, GANs; unsupervised & generative modeling
- Reinforcement Learning: Optimal policies in dynamic environments
- Graph Neural Networks: Concepts & implementation in recommendation systems
- NLP: Text/sentiment analysis, language modeling

Teaching Assistant   03/2023 – 03/2024
KAUST Academy   Thuwal, Saudi Arabia
- Taught Introduction to AI (Calculus, Linear Algebra, Machine Learning, Deep Learning)
  and Advanced AI (CNNs, Dataloading, AutoEncoders, Segmentation, Object Detection).

PUBLICATIONS

Enhancing Wireless Sentiment Classification with TinyML Approaches   14/10/2024
WCNC 2025 (Under Review)
First author for a preprint on using TinyML-based approaches such as Federated Learning
(FL) and Split Learning (SL) to enhance wireless sentiment classification under resource
constraints. This paper explores privacy-preserving techniques and energy-efficient
methods, demonstrating improved performance on semantic sentiment tasks in wireless
environments.

SARD: A Human-AI Collaborative Story Generation 🔗   30/06/2024
HCI International 2024
First author: "SARD: A Human-AI Collaborative Story Generation" (HCII 2024). Developed
a novel visual interface for AI-assisted story generation, leading design, implementation,
and user studies.

Addressing Bias Through Ensemble Learning and Regularized Fine-Tuning 🔗   25/08/2023
Preprint
First Author for a preprint proposing a novel approach to reduce bias in AI models with
limited data. Method combines fine-tuning, ensemble learning, and knowledge
distillation, demonstrating improved fairness on CIFAR-10 and HAM10000 datasets.

PROJECTS

Compact Multimodal Threat Detection System
Developing a compact Multimodal for cyclists that uses audio-visual data to detect road threats, efficiently running on
Arduino for real-time alerts.

PerfectPrayer
Developed and deployed a real-time Rak'ah tracking system for Salah on Android devices, using IMU sensors for
motion recognition. The app offers real-time accuracy, error detection, and a user-friendly experience.

COURSES

TinyML Course   Thuwal, Jeddah
King Abdullah University of Science and Technology (KAUST)

Mathematics for Machine Learning and Data Science Specialization 🔗
DeepLearning.AI

Machine Learning Specialization 🔗
DeepLearning.AI

AWARDS

1st Place Winner for 2024 Student Games 🔗
Organized By International Society of Automation and Sponsored by Aramco
Developed an AI-driven system, named GreenSightAI, to enhance greenhouse crop cultivation through early disease
detection and state assessment, reducing labour costs and improving yield quality.

1st Place Winner at Sehah Thon 🔗
Ministry of Health with Ministry of Hajj and Umrah
Developed an AI system to detect individuals needing immediate assistance and pinpoint their geographic location.
This solution enhances emergency response efficiency using advanced AI and geolocation technologies.

TECHNICAL SKILLS

Data science and AI libraries
Python, Pandas, Sklearn, Pytorch, TensorFlow, and Keras

Artificial Intelligence
Machine Learning, Deep Learning, Computer Vision, NLP, CNN, RNN, Transformers, GANs, Diffusion models, LLM,
HuggingFace.