ANAS AL-LAHHAM

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EDUCATION

Mohamed Bin Zayed University of Artificial Intelligence
Aug. 2021 - Present

MASTERS OF SCIENCE IN COMPUTER VISION

UAE

- **Full sponsorship, due to graduate in May 2023**
- **Major courses:** Human and Computer Vision, Visual Object Recognition and Detection, Geometry for Computer Vision, Digital Twins.
- **Current Research area:** Localizing Anomalies from Weakly-Labeled Videos

King Saud University
Sept. 2015 - May 2020

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Saudi Arabia

- **GPA**: 4.79/5.0
- **Ranked 1st among students graduated in my major**
- **Thesis**: "Sky-Imager Based Forecast of Solar Irradiance Using Machine Learning"

PUBLICATIONS

- Al-lahham, Anas, et al. "Sky Imager-Based Forecast of Solar Irradiance Using Machine Learning." *Electronics* 9.10 (2020): 1700.

RESEARCH INTERESTS

Computer Vision, Signal and image processing, Renewable Energy.

PROJECTS

Localizing Anomalies from Weakly-Labeled Videos
Aug. 2022 - Present

- The project aims to address the problem of detecting changes in video sequences captured through a moving camera compared to traditional surveillance.
- The proposed architecture is aimed to be transferable to different applications mainly **Automated Monitoring of Photovoltaic Plants**.

Sensory Data Fusion for High-Resolution $PM_{2.5}$ Estimation and Action Policies Recommendation
Feb. 2022 - Sep. 2022

- The project aims to build a digital twin (DT) of an atmospheric environment by fusing remote sensing and observational data
- Estimated values of $PM_{2.5}$ obtained from an ensemble model are used to provide recommendations for decreasing the agglomeration levels.
- A simple optimization problem is formulated for computing the recommendations.

Automated Monitoring of Photovoltaic Plants using Aerial Videos

Dec. 2021 - Present

- The overall goal is to develop algorithms that enable automated monitoring or inspection of solar photovoltaic (PV) plants based on aerial videos captured using drones/unmanned aerial vehicles (UAV).
- The initial use case will focus on quantifying the amount of soiling deposited on the PV panels and estimate the corresponding PV power loss (PVPL).
- The proposed system will be robust to diverse operating conditions.

Machine Learning-Based MPPT Control under Partial Shading Condition

Nov. 2020 - Feb. 2021

- The project aims to develop an ML-based maximum power point tracker (MPPT) technique for photovoltaics (PV) under partial shading (PS) condition.
- The proposed method is simulated in MATLAB/Simulink for feasibility analysis.

Sky-Imager Based Forecast of Solar Irradiance Using Machine Learning

Sept. 2019 - Oct. 2020

- This project presents a new computationally efficient machine learning algorithms for forecasting the solar irradiance for durations from 1 hour up to 4 hours using sky images.
- Compared to state-of-the-art computationally heavy algorithms, our approach achieves competitive results with much less computational complexity for both nowcasting and forecasting up to 4 hours ahead of time.
- Published an academic journal paper regarding the proposed approach **(Published: 16 October 2020)**.

TECHNICAL STRENGTHS

Software & Tools	MATLAB, AutoCAD
Languages	Python, C++
Frameworks	PyTorch, Keras, OPENCV, Tensorflow

EXPERIENCE

MBZUAI

Aug. 2022 - Dec 2022

Graduate Assistant for Mathematical Foundations of Artificial Intelligence — *UAE*

YOUSSEF MARROUN CONT.CO (YMCO)

Jun. 2019 - Aug. 2019

Electrical Project Engineer — *Saudi Arabia*

- **Internship** at YMCO on DALLAH hospital west expansion project. Worked with the electrical engineering team on reviewing and verifying different electrical systems layouts using AutoCAD, such as power, lighting, structure cable.

ACADEMIC ACHIEVEMENTS

Top 3 Teams in NASA Airathon competition: Predict Air Quality 2022

Nominated for best graduation project competition in the university 2020

King Saud University Distinguished and Talented Students Program Student Member 2015