

Abdelrahman El Rafey

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EXPERIENCE

Data Scientist/ML Engineer

Naval Researches Center And Calibration

December 2024 – Present

Alexandria, Egypt

- Deployed a deep learning solution to enhance INS navigation accuracy during GPS outages, leveraging sensor fusion techniques for robust positioning in marine environments.
- Implemented a deep learning image processing pipeline for ship classification, enabling automated identification of vessel types from onboard camera feeds.
- Developed and deployed a remote-controlled unmanned surface vehicle (USV), integrating GNSS/INS, LiDAR, and radar sensors for reliable navigation and obstacle avoidance.
- Integrated solid-state LiDAR and marine radar into a unified sensor suite, leveraging computer vision and predictive models to enhance situational awareness for autonomous maritime operations.
- Implemented real-time data pipelines and analytics dashboards using TensorFlow/Keras to monitor vehicle performance and optimize mission outcomes.

TECHNICAL SKILLS AND BACKGROUND

- Proficient in programming languages: **Python, C / C++**, with a strong foundation in **Object-Oriented Programming (OOP)**.
- Expertise in **AWS Cloud Platform (EC2, Amazon SageMaker AI, Amazon Services, S3)**.
- Strong experience in **Linux** system administration and virtualization.
- Technical Tools: **Tensorflow, Keras, Scikit-learn, Pandas, NumPy, Matplotlib**.
- Technical Skills: **Mathematical Modelling, Data Visualization, Data Preprocessing, Feature Engineering**.
- Other Skills: **ROS/ROS2**, strong foundations in the robotics field.

COURSES

- **Tensorflow for Deep Learning Bootcamp** – *Zero to Mastery Academy*.
- **AWS AI Practitioner** – *Certification in progress*.
- **Complete AI, Machine Learning, Data Science Bootcamp** – *Zero To Mastery Academy*.
- **Complete Guide for Freelancing** – *ZTM*.
- **Linux System Programming** – *University of Colorado Boulder*.
- **Math for Data Science Masterclass** – *Udemy*.

SOFT SKILLS

- Quick learner with the ability to master new concepts and technologies, and effectively share knowledge with team members.
- Strong problem-solving skills; experienced in identifying defects, analyzing root causes, and delivering reliable solutions under tight deadlines.
- Confident communicator with solid presentation and collaboration skills.

EDUCATION

- **Faculty of Engineering – Military Technical College [2019–2024]**
 - BSc. Electric Engineering

LANGUAGE

- **English** (fluent speaker),
- **Arabic** (native).