DHIEDDINE BARHOUMI
MACHINE LEARNING ENGINEER | MLOPS ENTHUSIAST

dhieddine.barhoumi@insat.ucar.tn | linkedin.com/in/barhoumi-dhieddine/ | dhieddinebarhoumi.me | github.com/dhiabarhoumi

EDUCATION

National Institute of Applied Sciences and Technology (INSAT)
National Engineer's Degree in Computer Science
Tunis, TN
Sept. 2020 – Present

    Relevant Courses: *Linear Algebra, Database Management, Algorithms and Data Structures, Deep Learning, NLP, Cloud Computing, Big Data, Optimization Methods, Reinforcement Learning*

Pioneer High School Hammam-Lif
Scientific baccalaureate
Ben Arous, TN
Sept. 2017 – June 2020

    Top 5% of bachelors with an excellent average grade.

EXPERIENCE

AI in Security Systems Intern
Jun. 2024 – Aug. 2024
All Points Smart Solutions
Amman, JO

- Developed AI Security Systems for historic sites (e.g., Ajloun Castle, Amman Citadel), integrating real-time threat detection and automated alerts.
- Enhanced ANPR Accuracy by 20%, optimizing recognition for high-speed and low-light conditions on major streets in Amman.
- Integrated AI Models with Milestone VMS for intelligent object detection and motion tracking, automating alerts and cutting false alarms by 30%.
- Tested AI Surveillance Solutions for diverse environments, refining system adaptability.
- Adapted to International Work Environment, gaining experience in cross-cultural collaboration and project execution.
- **Skills:** AI Surveillance, ANPR, Computer Vision, Deep Learning, Python, Project Coordination, Resource Management

Computer Vision Intern
Jun. 2023 – July. 2023
DidaMind
Ben Arous, TN

- Conducted research on multiple computer vision algorithms, choosing YOLOv8 for optimal speed and accuracy.
- Fine-tuned YOLOv8 for detecting angle and gusset objects in boxes, achieving 92.5% precision and 60% mAP50-95.
- Deployed the model as a real-time API on Microsoft Azure, integrating it with a dashboard for defect detection.
- Automated quality control, triggering alerts for misaligned or missing objects as boxes moved on a conveyor.
- Collaborated with a multidisciplinary team to replace manual defect detection for an industry client, boosting efficiency by 30%.
- Completed Microsoft Azure AI Fundamentals training and certification during the internship.
- **Skills:** YOLOv8, Computer Vision, Microsoft Azure, API Development, Real-Time Systems, TensorFlow, Python

PROJECTS

AI-Powered Loan Approval System
Oct. 2024 – Nov. 2024

- Developed a scalable machine learning application for real-time loan approval decisions.
- Designed an end-to-end pipeline including data ingestion, transformation, and model training with hyperparameter tuning.
- Implemented custom utilities, logging, and exception handling for efficient debugging and streamlined operations.
- Dockerized the application and hosted it on Azure Container Registry for scalable cloud deployment.
- Automated CI/CD processes with GitHub Actions, ensuring seamless integration and deployment to Azure Web App Service.
- **Skills:** Flask, Microsoft Azure, Docker, GitHub Actions, CI/CD, Hyperparameter Tuning

Reinforcement Learning-based Robot Navigation
Sept. 2023 – Dec. 2023

- Designed a reinforcement learning-based system to navigate complex indoor environments.
- Simulated realistic home-like environments in Gazebo with dynamic obstacles.
- Leveraged ROS2 for seamless integration, utilizing RViz for real-time monitoring of the robot's path and sensor data.
- Collaborated with colleagues, employing GitHub for CI/CD, ensuring robust version control and seamless updates.
- Implemented the TD3 algorithm with a custom reward function to optimize path planning and obstacle avoidance.
- **Skills:** Reinforcement Learning, ROS2, RViz, Gazebo, TD3, Python, GitHub, CI/CD, Simulation Environments

SKILLS

Programming: Python, C, C++, Java, SQL (BigQuery, Oracle, Mysql)
Machine Learning & AI Frameworks: Tensorflow, Keras, Pytorch, LangChain
Cloud & MLOps: Google Cloud Platform , Vertex AI, BigQuery, Docker, CI/CD, GitHub Actions, IBM Watson, Microsoft Azure

LANGUAGES

English: Professional Fluency (TOIEC : C1 965/990)
French: Professional Fluency
Arabic: Native Fluency

CERTIFICATES

Professional Machine Learning Engineer (Google Cloud)
Oct. 2024
TensorFlow Professional Developer (DeepLearning.AI)
Feb. 2024
Deep Learning Specialization (DeepLearning.AI)
Oct. 2023
AI Engineering Professional Certificate (IBM)
Jul. 2023
AI Fundamentals (Microsoft Azure)
Jun. 2023