

DHIEDDINE BARHOUMI

MACHINE LEARNING ENGINEER | MLOPS ENTHUSIAST

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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

All Points Smart Solutions

Jun. 2024 – Aug. 2024

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

DidaMind

Jun. 2023 – July. 2023

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

Cloud-based Scalable Machine Learning Pipeline

Sept. 2024 – Oct. 2024

- Designed an end-to-end machine learning pipeline using Vertex AI for automated training and deployment.
- Built real-time data ingestion with Cloud Functions and Pub/Sub, enabling continuous data updates.
- Deployed TensorFlow models on Cloud Run with auto-scaling for efficient performance.
- Integrated continuous retraining into the pipeline to ensure models evolve with incoming data, improving accuracy over time.
- Streamlined model updates and version control through a CI/CD pipeline with Cloud Build.
- Skills:** Google Cloud Platform, Vertex AI, TensorFlow, Cloud Run, Pub/Sub, Cloud Functions, Continuous Retraining, CI/CD

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