

Baraa Rjoob

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EDUCATION

Birzeit University

Bachelor of Science in Computer Science

Birzeit, Palestine

Sep 2022 – Jun 2026

- Relevant Coursework: Machine Learning, Computer Vision, Data Structures & Algorithms, Database Systems, Software Engineering, Object-Oriented Programming
- Focus Areas: AI/ML, Computer Vision, Backend Systems, Autonomous Systems
- Academic Exchange: Spent Fall 2024 semester at Freie Universität Berlin, Germany, participating in international collaborative projects, advanced coursework in AI, and cross-cultural academic exchange program

EXPERIENCE

Computer Vision / ML Engineering Intern

Summer 2025

Imagry Autonomous AI Systems

Remote

- Developed and optimized perception modules for autonomous vehicles, implementing object detection and lane recognition algorithms using C++ and OpenCV, achieving 89% mAP on custom dataset
- Built end-to-end data pipelines processing 50K+ images, implementing augmentation strategies (rotation, brightness, occlusion) that improved model robustness by 15% across varying weather and lighting conditions
- Integrated ML model outputs into real-time inference systems via REST APIs, reducing latency to under 100ms per frame for production deployment
- Collaborated with cross-functional team using Git for version control and participated in code reviews to maintain high code quality standards

Backend Developer Intern

Summer 2024

Falak Solutions

Palestine

- Designed and implemented RESTful microservices using Spring Boot and PostgreSQL, handling 10K+ daily transactions with 99.8% uptime
- Optimized SQL queries and database schema, reducing average query response time from 450ms to 180ms (60% improvement) and increasing system throughput by 3x
- Refactored monolithic modules into modular microservices architecture, improving code maintainability and reducing deployment time by 40%
- Implemented comprehensive API documentation using Swagger, facilitating seamless integration for frontend teams

PROJECTS

NASA Space Apps Challenge – Exoplanet Detection with AI | *Python, TensorFlow, CNN, LSTM*

2025

- Built deep learning models to identify exoplanets from transit light curve data using NASA Kepler mission dataset (197K+ observations)
- Implemented CNN-based architecture for time-series classification, achieving 92% accuracy in detecting exoplanet transits under noisy signal conditions
- Led data preprocessing pipeline: handled missing values, normalized light curves, and performed feature extraction from temporal patterns
- Experimented with multiple approaches including LSTM networks and ensemble methods, comparing model performance across precision, recall, and F1-score metrics
- Collaborated in 4-person team using Git, contributing 40% of final codebase

Real-Time Face Detection System | *C++, Qt, OpenCV, Multithreading*

2024

- Developed multithreaded C++ application using Qt and OpenCV for real-time face detection from live camera feed
- Implemented Haar Cascade classifiers achieving 30+ FPS on standard hardware
- Optimized for performance using parallel processing, reducing detection latency by 45%

Autonomous Vehicle Data Tooling | *C++, Python, LiDAR, Sensor Fusion*

2024

- Created C++ tools and Python scripts to collect, synchronize, and preprocess multi-sensor data (camera, LiDAR, IMU) for autonomous driving datasets

- Processed 3GB+ of raw sensor streams, implementing calibration and temporal alignment algorithms for dataset creation

Crisis Management System | *FastAPI, MongoDB, WebSocket, Geospatial*

2024

- Backend REST API using FastAPI and MongoDB for real-time incident tracking and geographic mapping
- Handles concurrent requests with sub-200ms response time
- Implemented geospatial queries for radius-based incident search and real-time WebSocket updates

Hotel Management System | *Spring Boot, PostgreSQL, REST API*

2023

- Full-stack application using Spring Boot and PostgreSQL managing bookings, guest records, and automated billing
- Designed normalized database schema supporting complex queries and implemented transaction management ensuring data consistency

TECHNICAL SKILLS

Languages: Python, C++, Java, JavaScript

ML & AI: TensorFlow, PyTorch, scikit-learn, Keras, OpenCV, Computer Vision Algorithms

Data Science: NumPy, Pandas, Matplotlib, Data Preprocessing, Feature Engineering, Model Evaluation

Backend & Web: Spring Boot, FastAPI, Django, REST APIs, Microservices Architecture

Databases: PostgreSQL, MySQL, MongoDB

Developer Tools: Git, Docker, Postman, VS Code, Jupyter Notebook, Google Colab

Desktop / GUI: JavaFx, Qt (C++)