Zaid Ghazal

Senior Data Scientist

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Machine Learning Engineer with 3+ years of experience developing AI solutions for clients like Aramco, British Petroleum, and the Dubai Government. Worked on fraud detection systems and contributed to building an easy-to-use SaaS platform that helps businesses adopt AI without coding. Key achievement: a 70% reduction in fraud detection overhead for Aramco, resulting in $1.5M in cost savings and around 50% faster deployment cycle.

RELEVANT WORK EXPERIENCE

Beyond Limits, Los Angeles, CA   June 2021 – January 2025
Machine Learning Engineer

- Engineered a real-time edge-hosted computer vision system for subway and airport security gates, achieving <1 second latency with 2 camera feeds analyzed in parallel using a custom compiled model through TensorRT to gain more performance when using NVIDIA GPUs and boards.

- Implemented centroid tracking with <1.5% missed objects, incorporating advanced algorithm design and feature engineering techniques, and applying Mathematical Statistics to improve the accuracy of analytics. Integrated detection, tracking, and depth estimation into a single modular pipeline-successfully live-tested in Europe with a 100% pass rate.

- Leveraged ML flow for Machine Learning Operations (MLOps) to track and monitor models' performance.

- Followed the Agile team methodology to ensure smooth team collaboration and tasks handling.

- Deployed robust APIs for remote model access and optimized deep learning performance (using CuDNN and quantization) to enable production-quality integration. Leveraged SQL and BigQuery for Data Transformation tasks, ensuring data integrity and efficient model deployment.

- Developed and maintained production-quality code adhering to strict coding standards including object-oriented programming and unit testing, resulting in around 80% reduction in bug occurrence at staging (quality assurance) phase, compared to unit testing-free development.

- Designed and implemented the data science service within the SaaS platform Blend Optimizer, providing end-to-end Machine Learning capabilities hosted on a High-Performance Computing (HPC) infrastructure using Python and Google Cloud Platform. This solution leveraged data analytics and operations research techniques to enable clients to manage datasets, perform exploratory data analysis, and train and evaluate ML models, handling Data Wrangling challenges all through an intuitive no-code user interface

Holoteq USA LLC, Dearborn, MI   June 2019 – September 2019
Mechatronics Engineering Intern

- Developed an embedded system using data analytics to detect driving mistakes during road tests, performing data acquisition and data cleaning on real-time vehicle data.
- Optimized data processing speed by 3x by upgrading to a multiprocessing controller (Shield Buddy - TC275), improving the efficiency of the data pipeline and reducing processing time.
- Integrated OBD II module with the controller to streamline data collection.
- Designed the falsification algorithm for detecting driver mistakes accurately in real-time.

EDUCATION

University of Michigan-Dearborn, Michigan, United States   January 2024 – July 2025
Master of Science - Artificial Intelligence (Computer Science)
University of Jordan, Amman, Jordan   September 2017 – June 2021
Bachelor of Science — Mechatronics Engineering

SKILLS

Programming Languages: Python, C++.

Software Tools and Packages: Pandas, NumPy, SciPy, Scikit-Learn, PyTorch, SQLAlchemy, PostgreSQL, FastAPI, Docker, SQL, ML-flow.

On-Edge Deployment: NVIDIA Jetson boards, Infenion ShieldBuddy TC275, Arduino, MQTT, AWS Lambda, AWS Core IoT

Mathematical Field: Statistics, Metaheuristic techniques such as Genetic Algorithm and Bayesian Optimizer.

Cloud Services: GCP, AWS

Development Tools: Jira, Bitbucket, Git, GitHub, Agile.

Research and Publications

- **Using Systematic Evaluation of Initial States and Exploration-Exploitation Strategies in PID Auto-Tuning: A Framework-Driven Approach Applied on Mobile Robots,** *submitted to IEEE ICARM 2025 conference*

- **Using Genetic Algorithm to Create Optimized ML Model for PV Power Generation Forecasting**
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