Mostafa Tarek

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Summary

A Computer Science graduate with a strong foundation in programming, databases, and data structures. Passionate about Data Engineering, Data Analytics, and Artificial Intelligence, with hands-on experience in real-time data processing, machine learning projects, and backend development. Adept at using tools such as Python, SQL, and DBT, with a solid understanding of data pipelines and data warehouse concepts. Highly motivated to contribute to innovative data-driven solutions and grow within a collaborative tech environment.

Education

Helwan University   *2021 – 2025*
BSc in Computer Science

- GPA: 3.49/4.0 (Excellent)

Experience

Business Intelligence Intern   *Jan 2025 – Feb 2025*
Information Technology Institute (ITI)

- Gained hands-on experience in data analysis, data visualization, and business reporting. with tools such as Power BI, SQL, and Excel to transform raw data into actionable insights.
- Learned to build interactive dashboards and reports to support decision-making processes.
- Developed an understanding of ETL processes, data modeling, and KPIs relevant to business performance.

IT Intern   *Aug 2024 – Sep 2024*
Agricultural Bank of Egypt (ABE)

- Assisted the IT team in maintaining and troubleshooting hardware, software, and network systems to ensure smooth banking operations.
- Strengthened problem-solving and teamwork skills in a fast-paced banking environment.

Artificial Intelligence Intern   *July 2023 – Aug 2023*
National Telecommunication Institute (NTI)

a strong foundation in machine learning, deep learning, and AI algorithms.

Gained hands-on experience using tools such as Python, TensorFlow, Keras, Pandas, and Scikit-learn.

- Worked on practical projects involving image classification, predictive modeling, and natural language processing (NLP).
- Participated in model training, evaluation, and optimization for real-world datasets.

Projects

Graduation Project – MedSite

- Developed a full-featured web-based system using Laravel to detect drug-drug interactions and check for contraindications based on patient profiles, applying Electronic Health Record (EHR) concepts.
- Designed and implemented a rule-based chatbot to provide instant, personalized answers about medications stored in the system's database.
- Built an automated reminder system that sends email notifications to patients about their medication schedules and dosages.
- Created a feature to simplify medical reports, enabling patients without a medical background to easily understand their health data.
- Focused on enhancing patient safety, health literacy, and proactive care through a user-friendly digital health platform.

Classification of Fractured and Non-Fractured Bones Using CNN

- Designed and trained a Convolutional Neural Network (CNN) to classify medical imaging data into fractured and non-fractured bone categories.
- Preprocessed and augmented medical images to improve model performance and generalization.

Heart and SpO2 Monitoring App and Device

- Designed and built a health monitoring system using Arduino to measure heart rate and oxygen saturation (SpO2) in real time.
- Integrated hardware sensors (e.g., pulse oximeter) with a custom-built mobile or desktop app for live data visualization and health tracking.

Personal Protective Equipment Detection Using YOLOv8

- Developed a real-time computer vision application to detect Personal Protective Equipment (PPE) compliance using the YOLOv8 object detection algorithm.
- Trained and fine-tuned the model to identify safety gear such as helmets, vests, and masks in live video streams and images.

Real-Time Data Streaming Application with Kafka and Spark

- Developed a real-time data processing platform using Apache Kafka for data ingestion and Apache Spark Streaming for processing and analytics.
- Handled high-velocity data streams, enabling real-time insights and decision-making for large-scale applications.

Old Stripes – Multi-Vendor E-commerce Platform

- Built a multi-vendor e-commerce website using Laravel, PHP, and Bootstrap to sell vintage football t-shirts.
- Designed role-based dashboards for buyers, sellers, and administrators with different privileges and interfaces.
- Implemented product approval workflow where admins review and approve/reject products before publishing.

Technical Skills

Data Engineering & Big Data: Apache Spark, Hadoop, Hive, Apache Airflow, DBT, Data Modeling, Data Warehouse Concepts
Programming Languages: Python, Java, C++
Databases & Querying: SQL, MySQL, PostgreSQL, MongoDB
Cloud Platforms: Microsoft Azure (Azure Cloud Fundamentals)
Web Development & Frameworks: PHP, Laravel
Tools & Platforms: Power BI, Git

Languages

Arabic: Native
English: B2
German: A1

Certifications

- **DataCamp:** Completed the Data Engineer Track, including Introduction to Python, SQL, and Data Engineering Concepts
- **National Telecommunication Institute (NTI):** Artificial Intelligence Internship Certificate
- **Information Technology Institute (ITI):** Business Intelligence Internship Certificate
- **Coach Academy:** Competitive Programming and Problem Solving Certificate
- **Google Developer Student Club – Helwan University:** Core Team Member Certificate of Completion (2022–2023)
- **Black Horse Courses:** Back-End Developer Course – Covered Laravel, PHP, Git, and MVC architecture