

Mohamed Khaled

Machine Learning Engineer | LLM & NLP Specialist

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Professional Summary

Highly motivated Machine Learning Engineer with 2+ years of dedicated experience in designing, developing, and deploying cutting-edge machine learning models and algorithms, complemented by 4+ years in Python-based software development. Specializing in Natural Language Processing (NLP) and Large Language Models (LLMs), I possess a strong foundation in end-to-end model training, deployment, and optimization for complex NLP tasks. Proficient in implementing transformer architectures and fine-tuning LLMs for specific applications, I am experienced in building production-ready ML systems with MLOps best practices, including Docker and CI/CD pipelines. My expertise spans data analysis, statistical analysis, and robust code development in Python, underpinned by deep knowledge of math, probability, statistics, and algorithms. I bring outstanding analytical and problem-solving skills, with a proven ability to collaborate effectively within cross-functional teams to implement solutions for challenging business problems.

Technical Skills

- **Programming Languages:** Python (Robust Code), SQL, JavaScript, Object-Oriented Programming (OOP)
- **ML Frameworks & Libraries:** TensorFlow, PyTorch, Scikit-Learn, Hugging Face Transformers, NumPy, Pandas
- **NLP & LLM:** Generative AI, Transformer Architectures, Text Processing, Prompt Engineering, Data Representation Methods

- **MLOps & Deployment:** FastAPI, Flask, Django, Docker, CI/CD Pipelines, RESTful APIs
- **Data & Architecture:** Data Structures, Data Modeling, Software Architecture, Database Management, Data Visualization
- **Core Concepts:** Machine Learning Algorithms, Statistical Analysis, Probability, Deep Learning

Professional Experience

Junior Python Developer | Monzer Foda Co. Ltd | Cairo, Egypt | 2023 - 2024

- Engineered robust Python APIs to facilitate seamless integration between ERP systems (Odoo, Frappe) and a government tax platform, efficiently processing over 1,000 daily invoices and ensuring high data integrity. - Designed and implemented complex data transformation pipelines for multi-ERP compatibility, applying data modeling principles that significantly reduced manual data processing by 60%. - Developed and deployed compliance validation checks, leveraging analytical and algorithmic logic to decrease submission errors by 50% and enhance data quality. - Deployed a real-time monitoring dashboard for invoice submission tracking, providing critical insights for operational oversight and data analysis. - Collaborated effectively with ERP vendors and cross-functional teams to bridge system-specific requirements and integrate comprehensive software solutions.

Junior Python Developer | Egyptian E-Invoicing System | Cairo, Egypt | 2020 - 2021

- Integrated Odoo/Frappe ERP systems with the Tax Authority platform via robust REST APIs, ensuring secure and efficient data exchange and adherence to software architecture best practices. - Standardized data pipelines for heterogeneous invoice formats, applying data modeling and data representation methods to ensure consistency and accuracy across diverse datasets. - Established and implemented government-mandated validation protocols, leveraging analytical skills and algorithms to define rules and minimize submission discrepancies. - Automated XML generation for tax submissions, incorporating sophisticated error recovery mechanisms to ensure data reliability and operational resilience. - Coordinated with vendor teams on ERP-specific data mappings, demonstrating strong communication and teamwork in a complex technical environment.

Projects

Intelligent SMS Filtering System - Designed, developed, and deployed an Intelligent SMS Filtering System utilizing advanced machine learning algorithms, specifically NLP techniques, to automatically identify and filter unwanted or potentially harmful text messages. - Achieved a 31% improvement in the detection of scam messages compared to the previous system, directly enhancing user protection against fraud and phishing attempts. - Ensured high model accuracy by running extensive machine learning tests and experiments, with over 89% of flagged messages correctly identified as unwanted, minimizing false positives through rigorous statistical analysis and fine-tuning. - Applied appropriate ML algorithms and data representation methods to build a robust machine learning application capable of transforming data science prototypes into a functional solution.