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Exempted from Military Service

Education

Ain Shams University, Cairo, Egypt

Sep. 2019 – Jul. 2024

Bachelor of Science in Computer Engineering & Software Systems

University of East London, London, UK

Sep. 2020 – Jul. 2024

Dual Degree Certificate in Computer Engineering & Software Systems, **First Class Honors**

Leadership & Extracurricular

Pirates Egypt

Feb 2024 – June 2024

Machine Learning Instructor

Cairo, Egypt

- Mentor peers and junior engineers in machine learning, data analytics, and AI methodologies.
- Conduct workshops and training sessions on emerging AI and ML technologies.

Relevant Coursework

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|-----------------------|-------------------------------|-----------------------|---------------------|
| • Data Science & AI | • Computer Vision | • Backend Development | • ASP.Net |
| • Machine Learning | • Natural Language Processing | • Embedded Systems | • Data Analytics |
| • Deep Learning | | • Agile Software | • Flutter |
| • LLMs & Transformers | | • FastAPI, Flask | • Lang chain, LLama |

Experience

Huawei

May 2025 – Present

AI & Automation Intern – Data Insights & Engineering Tools

Cairo, Egypt

- Develop and maintain Python-based automation tools to streamline internal workflows, reduce manual effort, and enhance productivity.
- Analyze operational data to extract actionable insights and generate automated reports for internal stakeholders.
- Utilize Selenium and web automation techniques to interface with internal systems, improving the speed and accuracy of repetitive tasks.
- Support AI-driven initiatives by contributing to data preparation, preprocessing pipelines, and exploratory data analysis.
- Collaborate with cross-functional engineering teams to ensure tool compatibility and alignment with enterprise platforms.

Ingenuity

Sep. 2023 – Present

Data Scientist / AI Engineer

Remote

- Architect and deploy cutting-edge machine learning models using PyTorch, TensorFlow, and Hugging Face frameworks.
- Design, develop, and optimize scalable data pipelines with pandas, NumPy, and PySpark for robust data cleansing and transformation.
- Implement model fine-tuning, hyperparameter optimization, and continuous integration strategies to ensure production-grade AI solutions.
- Collaborate with cross-functional teams to embed ML modules into complex data ecosystems and backend infrastructures.

Belayim Petroleum

Aug. 2023 – Sep. 2023

Software Engineering Intern

Cairo, Egypt

- Engineered and maintained an efficient SQL database for employee management, streamlining operational workflows.
- Enhanced backend services using ASP.NET and PHP to improve data retrieval and secure user management.
- Adopted agile methodologies and security best practices to support scalable software development initiatives.

Projects

Arabic OCR for Handwritten & Printed Text | *Python, EasyOCR, PyTorch* Sep. 2023 – Jul. 2024

- Engineered a comprehensive OCR system for Arabic scripts by fine-tuning pre-trained models, increasing accuracy from 40% to 80%.
- Integrated robust data preprocessing, augmentation, and post-processing workflows to enhance model resilience.
- Partnered with Fotopia Tech to align development with industry standards and deployment practices.

AI-Powered Document Q&A System | *Python, FastAPI, React, OpenAI, ChromaDB* Jan. 2024 – Present

- Developed a full-stack AI question-answering system using FastAPI backend and React frontend, enabling users to upload documents and receive intelligent responses through OpenAI GPT-3.5-turbo integration.
- Implemented vector similarity search with ChromaDB and sentence transformers, achieving accurate document retrieval and context-aware responses for complex queries.
- Built secure JWT authentication system with PostgreSQL database, supporting multi-user document isolation and comprehensive query history logging.
- Engineered automated deployment pipeline with Docker containerization, reducing setup time from hours to minutes and ensuring consistent development environments.
- Live Demo: Deployed and maintained production version accessible at <http://16.16.129.60:3000/>

Autonomous AI Agent Framework | *Python, LLMs, LLama, FastAPI, FAISS* Mar. 2024 – Present

- Built a modular AI agent framework capable of executing tasks like web search, summarization, file handling, and code generation using LLMs.
- Integrated FastAPI for a web-based interface and FAISS for document retrieval with vector databases.
- Implemented multi-tool agent logic using LangChain agents to simulate human-like task delegation and reasoning.

Disaster Tweets Analysis | *Python, TensorFlow, LSTM, Pandas* Aug. 2021 – Sep. 2021

- Developed an LSTM-based neural network to classify disaster-related tweets, achieving an 80% accuracy rate.
- Applied NLP techniques for effective data cleaning and feature extraction from Twitter datasets.
- Showcased the potential of AI-driven real-time social media analytics in crisis management.

Power Windows Control – RTOS Implementation | *C, FreeRTOS, Tiva C* Sep. 2023 – Mar. 2024

- Programmed a Tiva C microcontroller to implement a FreeRTOS-based system for automotive window control.
- Integrated features including manual/auto operation, jam protection, and dual-control window locking for driver and passenger sides.

Game Listings Platform | *ASP.NET Core, C#* Feb. 2025

- Developing a secure, RESTful API-driven backend for dynamic game listings and user authentication.
- Utilizing Entity Framework to ensure efficient, scalable database management.

Car Pool App | *Flutter, Firebase* Sep. 2023 – Feb. 2024

- Developed a full-featured car pool mobile app using Flutter and Firebase.
- Implemented user registration, secure login, ride creation, ride reservation, and ride status tracking functionalities.
- Integrated real-time updates and secure authentication through Firebase services.
- driver version available here <https://github.com/AhmedOssamaAhmed/carpooldriversversion/>

Technical Skills

Languages: Python, C#, C, C++, Java, JavaScript, PHP, Dart

AI & ML: TensorFlow, PyTorch, RAG, Hugging Face, Scikit-learn, LLMs, LangChain, PYMC

Data Handling: Pandas, NumPy, PySpark, Mudata, AnnData, Matplotlib

Backend: ASP.NET Core, FastAPI, Flask, PHP, Node.js, SQL, MongoDB, MySQL

Embedded & Systems: AUTOSAR, ARM microcontroller, FreeRTOS, Linux (Red Hat)

Tools: Git, Jenkins, Agile Software Development, Visual Studio, VS Code

Automation & Tools: Selenium, Git

Cloud & Platforms: AWS (S3, EC2), Red Hat Linux

Mobile Development: Flutter, Java