Mohamed Elshoraky

AI Engineer

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LinkedIn GitHub Kaggle

PROFILE

I'm a Computer Engineering student and AI/ML Engineer with experience in machine learning, computer vision, and NLP—focused on learning, planning, and building real-world AI solutions.

EDUCATION

Bachelor of Computer Engineering 10/2022 – present
Kafr El-Sheikh University Kafr El-Sheikh, Egypt
CGPA: 3.86 / 4.00

EXPERIENCE

Computer Vision Intern 07/2025 – 08/2025
Summer Training, NTI Online
- Trained in OpenCV, image processing, and deep learning fundamentals
- Explored CNN architectures (ResNet, DenseNet), implemented from scratch and via transfer learning
- Covered object detection, face recognition, segmentation, and pose estimation
- Built 5 projects including virtual keyboard, smart attendance system, image classification with DenseNet, and Canny edge from scratch, video processing

Machine Learning Intern 06/2024 – 12/2024
Digital Egypt Pioneers Initiative (DEPI) Kafr El-Sheikh, Egypt
- Applied ML techniques (SVM, decision trees, neural networks) and performed data preprocessing and EDA on real-world datasets.
- Built deep learning models (GANs, GRUs, LSTMs) and utilized transfer learning with pre-trained models like BERT for NLP tasks.
- Experienced in leveraging MLflow for model tracking and deployment.
- Improved soft skills (teamwork, leadership, communication) and gained freelancing insights.

Entrepreneurship Program Participant 01/2024
Innovegypt Program, ITIDA Kafr El-Sheikh, Egypt
- Completed 45-hour expert-led training on startup development: idea generation, prototyping, lean techniques.
- Developed and pitched a startup project; gained hands-on experience in problem-solving and business modeling.
- Collaborated in teams to brainstorm and refine innovative solutions, enhancing teamwork and communication.
- Acquired financial literacy, and marketing strategies from professionals.
- Learned to navigate the startup ecosystem, leveraging resources for growth.

PROJECTS

Vision-Based Virtual Keyboard
- Implemented a contactless virtual keyboard that interprets hand gestures as keystrokes using a webcam
- Utilized MediaPipe for real-time hand and gesture tracking (fingertip and pinch detection)
- Employed OpenCV to render a custom on-screen keyboard with interactive visual feedback
- Displayed typed text in real-time as user input via gesture was captured

Real-Time Facial Recognition Attendance System
- Developed a contactless attendance system using facial recognition from live webcam input
- Utilized YuNet for fast and accurate face detection with low computational overhead
- Applied DeepFace for embedding extraction and identity verification
- Integrated FAISS for scalable, high-speed face matching across known individuals
- Automated daily attendance logging into CSV files

Vehicle Detection & Speed Estimation
- Developed a vision-based system to detect, track, and estimate vehicle speed from video
- Used YOLOv8 and OpenCV for real-time vehicle detection and video processing
- Applied ByteTrack for multi-object tracking with consistent vehicle IDs
- Calculated speed using frame timing and real-world distance calibration
- Rendered annotated output video with bounding boxes, speed labels, and vehicle counts

Real-Time Health Monitoring & Prediction System (IoT & ML)
- Collected real-time ECG, heart rate, SpO_2, and temperature data using ESP32 and biomedical sensors.
- Trained a PyTorch DNN achieving 97% accuracy in predicting health status from sensor data.
- Deployed the model via Flask, integrated with Firebase for real-time data input.
- Automated end-to-end pipeline from sensor data to live health predictions.
- Built a UI to display real-time vitals and ML-based health status.

Mano Basic Computer Implementation
- Implemented full Mano Basic Computer architecture with instruction set, memory, I/O, and control units.
- Designed and simulated digital circuit in Proteus using selected ICs and custom timing delays.
- Developed synthesizable Verilog code for registers, ALU, control logic, and bus system.
- Verified instruction execution and interrupt handling via extensive simulation and test programs.

Sentiment Analysis Tool
- Conducted data preprocessing, feature engineering, and exploratory data analysis (EDA) on text datasets.
- Built and evaluated multiple machine learning models (decision trees, SVM) and deep learning architectures (LSTM).
- Achieved the highest accuracy using the BERT model, leveraging transfer learning for optimal performance.
- Tracked and managed model performance using MLflow for reproducibility and scalability.
- Deployed the model using Flask and developed a user-friendly UI for seamless interaction

Yallakora Match Data Scraper
- Built a Python-based web scraping tool using BeautifulSoup to extract football match data from Yallakora.
- Enabled date-specific scraping to fetch match details like teams, times, and scores.
- Exported data to CSV for easy storage and analysis.
- Leveraged libraries like requests, BeautifulSoup, and csv for efficient scraping and data handling.

Life Expectancy Prediction
- Preprocessed WHO Life Expectancy dataset, handling missing values and encoding features.
- Developed and trained Linear Regression (scikit-learn) and Neural Network (PyTorch) models.
- Evaluated models using MSE and visualized predictions for actionable insights.

Telco Customer Churn Prediction
- Analyzed telecom customer data to identify churn patterns through exploratory data analysis (EDA) and feature engineering.
- Built and evaluated machine learning models (KNN, Random Forest, Logistic Regression) and neural networks (TensorFlow, PyTorch).
- Delivered actionable insights to improve customer retention strategies and reduce churn rates.

Shaghalni - شغلني
- Proposed a startup solving job access for programmers and engineers through an app
- Conducted comprehensive project planning, including BMC, personas, empathy maps, and prototypes, and presented a detailed roadmap for development, scalability, and user engagement strategies.
- Planned a 24-month roadmap for app development, course/job expansion, and profitability.

Portfolio Website
- Developed a modern, responsive personal portfolio website using HTML, CSS, and JavaScript.
- Implemented smooth scrolling navigation, video background, and a mobile-friendly hamburger menu.
- Displayed skills, services, and projects with visual elements like progress bars and icons.
- Integrated contact information, social media links, and a downloadable resume for easy accessibility

SKILLS

AI & Data Science
- PyTorch
- Keras
- Scikit-Learn
- NumPy
- Pandas
- MatPlotLib
- Seaborn

Computer Vision
- OpenCV
- YOLO
- MediaPipe
- DeepFace

Web Scraping
- BeautifulSoup
- lxml
- requests

MLOps
- Git & GitHub
- MLflow
- Flask
- Azure

Hardware Engineering
- VHDL
- Verilog
- µP Architecture
- Arduino

Software Fundamentals
- C++ Basics
- Python
- Data Structures
- Algorithms
- problem Solving
- OOP
- Assembly

Databases
- Database Fundamentals
- SQL

Web Development
- HTML
- CSS
- JS

Beyond the Code
- Time Management
- Team Collaboration
- Hard Working
- Responsibility

LANGUAGES

Arabic ●●●●●
Native

English ●●●○○
Intermediate