

# Ahmed Refaat Mokhtar

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## SUMMARY

Highly motivated Machine Learning and Software Development enthusiast with hands-on experience in building AI-driven solutions, including CNN-based emotion recognition, NLP sentiment analysis, and predictive modeling for real estate pricing. Skilled in Python, Pandas, NumPy, SQL, Matplotlib, and end-to-end data processing workflows.

Experienced in data analysis and visualization using Power BI, able to transform complex datasets into actionable insights to support decision-making.

I also have a strong foundation in IoT application development and practical experience designing system architectures, integrating sensors, and developing camera-based recognition systems.

Passionate about creating scalable, reliable, and high-impact solutions—combining analytical thinking with strong problem-solving skills. Currently expanding my expertise in backend development and system integration, focusing on delivering efficient, user-centric applications.

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## EDUCATION

### Bachelor of Computer Science (CS)

Culture and Science City (CSC)

- Expected Graduation: 2026.
  - GPA: 3.3/4
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## SKILLS

**Programming & Data Analysis:** Python, SQL, Pandas, NumPy, Matplotlib, data preprocessing, encoding, scaling, feature engineering

**Machine Learning & AI:** TensorFlow, Keras, scikit-learn, OpenCV

**Data Visualization & BI:** Power BI dashboards and reports, transforming complex datasets into actionable insights

**Tools & Platforms:** GitHub, VS Code, Jupyter Notebook, Google Colab, basic backend development (APIs with FastAPI, Streamlit)

**Soft Skills:** Analytical thinking & problem-solving, team collaboration & project management, fast learner, adaptable to new technologies

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## WORK EXPERIENCE

- AI & Data Projects (Freelance / Academic Projects)  
Various Projects | 2024 – Present
- Developed CNN-based emotion recognition system with 96% accuracy.
- Built NLP models for Twitter sentiment analysis achieving 95% accuracy.
- Designed predictive models for real estate price estimation.
- Created dashboards and reports using Power BI for data-driven insights.
- Implemented Deep Learning image classification models using transfer learning (ResNet, VGG) for medical and object detection datasets.
- Developed ensemble ML models combining Random Forest, XGBoost, and VotingClassifier for improved prediction accuracy.

## PROJECTS & PRACTICAL EXPERIENCE

- **Emotional Face Detection (CNN):** Built a Convolutional Neural Network for emotion recognition on facial images, achieving 96% accuracy. Implemented image preprocessing, augmentation, and deep learning optimization techniques.
  - **Customer Churn (EDA & ML):** Performed exploratory data analysis and machine learning, developing a churn prediction model with 95% accuracy using Logistic Regression, Decision Tree, and Random Forest.
  - **Health Disease Prediction (Streamlit & ML):** Developed a predictive system for Diabetes, Heart, Alzheimer's, and Kidney diseases using machine learning models (Logistic Regression, SVM, KNN, Random Forest). Implemented data preprocessing, feature engineering, and built a user-friendly Streamlit interface for real-time predictions and visualization of result
  - **SMS Spam Classification (NLP):** Developed an NLP-based spam classifier using TF-IDF and Multinomial Naive Bayes, achieving strong accuracy.
  - **Twitter Sentiment Analysis (NLP & ML):** Developed an NLP pipeline for sentiment classification of tweets, achieving 97% accuracy. Applied tokenization, TF-IDF, word embeddings, and trained models including Logistic Regression and LSTM.
  - **Real Estate Price Prediction (ML):** Built predictive models for housing prices using Linear Regression, Random Forest, and XGBoost. Applied data cleaning, feature engineering, and regression techniques for accurate estimation.
  - **Clinic Management System: (AI & Software Development):** Developed a comprehensive Clinic Management System to streamline patient registration, appointment scheduling, and medical record management. Implemented data-driven features including automated patient monitoring and analytics dashboards. Built a user-friendly interface for staff and patients, enhancing operational efficiency and improving healthcare service delivery.
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## TRAINING & CERTIFICATES

- **Supply Training Academy** – Python, Java, C++ (90 hours)
- **Supply Training Academy** – Network Fundamentals (CCNA) (90 hours)
- **AI for All** – From Basics to GenAI Practice (iti - Nvidia)
- **AI & ML Training** – Mindset Academy (Python, NumPy, Pandas, Matplotlib, scikit-learn, SQL, ML & Advanced DL) (90 hours)
- **Data Analysis Alaa Essam Camp** – Excel, Power BI, Python, SQL (60 hours)
- **Practical ML For Data Scientists** - ITI platform (14 hours)
- **AI and ML** - Aprints Summer Camp (40 hours)
- **Python for data analysis Diploma** - Udemy (Eng - Mustafa Othman (41 hours))
- **Machine learning Diploma** - Udemy (Eng - Mustafa Othman (34 hours))
- **Machine learning Diploma** - NTI (120 hours)
- **Deep Learning MiniCamp** - Udemy (Eng - Ahmed Mostafa )
- **Artificial Intelligence Project** - Udemy (Eng - Mustafa Othman)