

# Zeyad El-Sayed

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Zagazig, Egypt | Military Service: Completed

## TECHNICAL SUMMARY

AI/ML Engineer with experience in building and fine-tuning NLP, LLM, computer vision, and GANs, performing data analysis, preprocessing, handling imbalanced datasets, and implementing Autoencoders and DL algorithms.

## SKILLS

**Programming Languages:** Python, C++

**Frameworks & Libraries:** PyTorch, TensorFlow/Keras, Hugging Face, Scikit-learn, Pandas, NumPy, OpenCV, Matplotlib, PyCaret

**Developer Tools:** Git, Jupyter, VS Code **Machine Learning:** Supervised/Unsupervised ML, Feature Engineering, Model Evaluation, Imbalanced Data Handling, PEFT (LoRA, QLoRA)

**Deep Learning:** CNNs, RNNs, LSTMs, Transformers, Autoencoders, DCGANs

**NLP & LLMs:** Tokenization, Attention, Transformers, Fine-Tuning, Embeddings

**Computer Vision:** Image Denoising, GANs

**Data Engineering & BI:** SQL, Tableau, Power BI, Excel

## EXPERIENCE

### Information Technology Institute (ITI)

Jul 2023 – Sep 2023

*Business Intelligence Trainee*

- Learned SQL, data modeling, and data warehouse concepts.
- Built dashboards using Tableau and Power BI.
- Applied BI tools to real-world analytics tasks.

## PROJECTS

### Catch the AI | *Python, Django, React, PostgreSQL*

GitHub | *Project Website*

- Built ViT and EfficientNet models to detect AI-generated images with **96%** accuracy for media verification.
- Built an NLP-based detector (DeBERTa, RoBERTa) with **95%** accuracy in spotting AI-generated text.
- Implemented Wav2Vec 2.0 for speech detection, achieving **90%** accuracy in identifying AI-generated audio.

### LLMs from Scratch | *PyTorch, NLP*

GitHub

- Built (LLM) from scratch with tokenization, attention mechanisms, and transformer blocks.
- Implemented end-to-end training pipelines, including optimization and evaluation.
- Acquired deep understanding of modern NLP architectures and transformer-based design principles.

### Fine-Tuning LLMs | *PyTorch, PEFT techniques, HuggingFace, NLP*

GitHub

- Curated a fine-tuning repository and rapidly deployed models on Hugging Face Spaces for text classification, generation, and summarization.
- Applied LoRA and other PEFT techniques to optimize NLP models efficiently.
- Evaluated models using ROUGE-L, BLEU, and additional metrics, achieving 95%+ performance across tasks.

### Imbalanced Data Treatment | *Python, imblearn, sklearn, matplotlib, seaborn*

GitHub

- Performed data analysis on imbalanced datasets and benchmarked models before applying sampling.
- Applied multiple sampling techniques (Over/Under, SMOTE, TomekLinks, SMOTE-Tomek)
- Tested KNN, RF, SGD, XGB, DT before/after sampling, achieving clear boosts in recall and F1-score.

### Credit Score Classification | *Python, PyCaret, Tableau, sklearn*

GitHub

- Cleaned and analyzed data with heavy missing/wrong values using custom code, statistical methods, and Tableau for visualization.
- Built a solid preprocessing pipeline that improved data quality and model performance.
- Trained models used PyCaret library to train models (Extra Trees, RF, XGBoost, KNN, DT).

## EDUCATION

### Benha University

Oct 2020 – Jun 2024

*B.S. in Computers & Artificial Intelligence*

*GPA: 3.4*