

# BASSEM YASSER TAHA

## AI Engineer • NLP Specialist • Machine Learning Engineer

**Location:** Cairo, Egypt

**Phone:** (+20) 01287638695

**Email:** [bassemyasser205@gmail.com](mailto:bassemyasser205@gmail.com)

**LinkedIn:** [linkedin.com/in/basem-yasser-70b475277](https://www.linkedin.com/in/basem-yasser-70b475277)

**GitHub:** [github.com/bassommma](https://github.com/bassommma)

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## PROFESSIONAL SUMMARY

Natural Language Processing Engineer with expertise in transformer architectures, BERT fine-tuning, and Retrieval-Augmented Generation (RAG) systems. Proficient in designing and deploying production-ready NLP solutions using PyTorch, TensorFlow, and LangChain. Seeking to leverage deep learning and NLP expertise to solve complex language processing challenges.

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## TECHNICAL SKILLS

- **NLP Techniques:** Transformers, BERT, Attention Mechanisms, RAG, Text Classification, Sentiment Analysis, Text Generation, Summarization, Translation
  - **ML/DL Frameworks:** PyTorch, TensorFlow, Keras, Hugging Face Transformers
  - **Programming:** Python, C++
  - **Libraries & Tools:** LangChain, scikit-learn, NumPy, Pandas, Vector Databases, Docker, Jupyter
  - **ML Concepts:** Neural Networks, Parameter-Efficient Fine-Tuning (LoRA), Transfer Learning
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## PROJECTS

### Natural Language Processing

- **Custom Transformer Implementation**
  - Built transformer models from scratch for text summarization, generation, and translation tasks
  - Implemented attention mechanisms and encoder-decoder architecture for optimal performance
- **BERT Fine-tuning for Sentiment Analysis**
  - Applied Low-Rank Adaptation (LoRA) technique for efficient parameter adaptation of BERT models
  - Achieved [X]% accuracy on sentiment classification benchmarks with reduced computational requirements
- **Retrieval-Augmented Generation System**
  - Developed an end-to-end RAG system using LangChain and vector databases

- Created efficient document retrieval pipeline for question answering on large document collections
- Implemented semantic search capabilities for improved context-relevant responses

## Computer Vision

- **Image Classification Models**
    - Built and optimized image classification models using Torchvision
    - Applied transfer learning techniques to adapt pre-trained models to specific domains
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## EDUCATION

### Bachelor's Degree in Artificial Intelligence

Cairo University | Cairo, Giza

Graduation Date: 2023

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## CERTIFICATIONS

- **LangChain Chat with Your Data** - [Verify]
  - Created chatbots with LangChain to interface with private data and documents
- **Natural Language Processing with Attention Models** - [Verify]
  - Specialized in transformers, attention mechanisms, and NLP applications
- **Deep Learning Specialization (2024)**
  - Neural Networks and Deep Learning – [Verify]
  - Convolutional Neural Networks – [Verify]
  - Structuring Machine Learning Projects – [Verify]
  - Improving Deep Neural Networks – [Verify]