

Basma Tarik Mohammed

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Objective

Dedicated and detail-oriented Computer Science graduate with a strong foundation in artificial intelligence, machine learning, and computer vision. Experienced in developing and deploying innovative solutions for real-world applications, including healthcare, disaster management, and retail security. Proficient in deep learning, image segmentation, and object detection, with a proven track record of delivering high-accuracy models and user-friendly interfaces. Actively seeking opportunities to contribute expertise in AI and computer vision to solve challenging problems and drive impactful innovations.

Education

- *Bachelor of Computer Science, Modern Sciences and Arts University (MSA), Jul 2024* *6th October city, Egypt*
- *Bachelor of Computer Science, University of Greenwich, Jul 2024* *London, United Kingdom*

Relevant Coursework

- Data Structures
- Algorithms Analysis
- Artificial Intelligence
- OOP
- Statistics
- Database Management
- Internet Technology
- Machine Learning

Internships

Cellula Technologies, Inc **Aug. 2024 – Oct. 2024**
Computer vision Intern

- **Empowered Dental Health:** Engineered a cutting-edge machine learning model for teeth disease classification, leveraging a rich dataset to significantly enhance diagnostic accuracy in dental care.
- **Pioneered Flood Rapid Mapping:** Implemented advanced image segmentation techniques using optical data to enable real-time monitoring of flood-affected regions, driving swift and effective disaster response.
- **Redefined Retail Security:** Contributed to a sophisticated shoplifting detection system, harnessing computer vision to proactively identify suspicious behaviors and fortify retail security measures.

Information Technology Institute - ITI **Sep. 2022 – Oct. 2022**
Artificial intelligence Intern

- Designing and developing training modules and course materials focused on SAS programming, data manipulation, statistical analysis, and predictive modeling.
- Contributed to earn the *Microsoft Azure AI Fundamentals certification*.

Projects

Real-Time Role Detection System for Soccer Scene Analysis Using Deep Learning | Electro Pi **29 Oct. 2024 - 2 Nov 2024**

- Developed a deep learning-based object detection system for real-time role identification in soccer scenes using SoccerNet dataset.
- Performed manual annotation of images to create distinct labels for roles such as referee, goalkeepers, and team players.
- Utilized YOLO and Faster R-CNN models, optimizing them for accurate role recognition in real-time applications.
- Achieved enhanced accuracy in automated role detection through rigorous testing across diverse soccer scenes.

Flood Rapid Mapping Detection With Optical Data Image Segmentation | Cellula Technologies Intern **2 Sep. 2024 - 19 Sep. 2024**

- Built a U-Net-based semantic segmentation model with a 12-channel input (Satellite images) to detect complex image features.
- Utilized the ResNet50 and ResNet34 backbones for feature extraction and custom upsampling layers for high-resolution output.
- Proficient in handling challenges related to **imbalanced datasets**, **data augmentation**, and **model overfitting**.
- Achieved high accuracy **92.29%**, indicating effective segmentation performance and GPU-optimized training setups.
- Integrated the model into a Flask web application for deployment, enabling users to upload multi-band images and receive segmented output.

- Developed a deep learning-based system for automatic teeth disease classification using a custom Teeth Dataset.
- Built and trained custom CNN and EfficientNet models to classify seven types of teeth diseases.
- Implemented image preprocessing and data augmentation to enhance model generalization.
- Achieved a validation accuracy of **76%** with effective hyperparameter tuning.
- Designed and deployed a **user-friendly Streamlit interface**, allowing prediction of categories from user-uploaded images.

Mental Health Assessment: Analyzing Body Language Patterns And Emotional Expressions | MSA**Sep. 2023 - Jul. 2024**

- Developed a deep learning-based system to detect emotions through body language in images.
- Experimented with various deep learning models and fine-tuned pre-trained models to enhance performance.
- Achieved significant accuracy in detecting emotions through comprehensive testing and validation, Best result achieved was **94.5**.
- Published a paper on this project in **IEEE** at the IMSA conference, one of the **best 30** papers.

Technical Skills

Languages: Python | C++ | SQL | C#**Developer Tools:** VS Code | Google Cloud Platform | Jupyter notebook | Kaggle workspace | Flask | Streamlit**Technologies/Frameworks:** GitHub | TensorFlow | PyTorch | Keras | Scikit-Learn.**Personal Information**

Marital Status: Single**Date of Birth:** 7th Sep 2003**Nationality:** Egyptian