

Youssef Maaod

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EDUCATION

Ain Elsokhna, Galala University Oct 2022 - June 2026 Bachelor's Degree of Computer Science, Specializing in Artificial Intelligence Science, Faculty of Computer Science and Engineering | CGPA:Excellent

ACHIEVEMENTS AND AWARDS

- **Top Graduation Project, Digital Egypt Pioneers Initiative**— Selected to be between the top 10 projects out of 15,000+ students; award ceremony attended by senior officials from the Ministry of Communications.
 - **Ideal Student Award, Artificial Intelligence Science Program, 2025**—Winner at the program level; one of five finalists across the university, nominated by the program director for outstanding academic performance and significant contributions.
 - **Qualified for the Pre-Final Round, International Astronomy and Astrophysics Competition (IAAC) 2025** – Selected among top participants worldwide after successfully passing the Qualification Round, solving 4 out of 5 physics and mathematics problems.
 - **CAISAIS2025 AI International Conference, Galala University (Dec 8, 2025)** – Presented my research paper “A Flash of Insight: Real-Time Meteor Shower Classification with Machine Learning”, [link](#).
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PUBLICATIONS

1. **Y. Maaod**, A Flash of Insight: Real-Time Meteor Shower Classification with Machine Learning. **IEEE CAISAIS2025**— presented at CAISAIS2025.
 2. **Y. Maaod**, Automated Detection and Classification of Solar Radio Bursts Using e-CALLISTO Spectrum Data and YOLO v11 deep learning model. **IAF IAC2025 Link:**[\[link\]](#)—**Published September 2025.**
 3. **Y. Maaod**, Explainable AI-Based Enhanced Classification of Gravitational Wave Anomalies Using Vision Transformers. **IEEE SRC2025 Link:**[\[link\]](#)—**Published September 2025.**
 4. **Y. Maaod**, Swin Transformer for Bone Metastasis Classification: A Comparative Study with Transfer Learning Models. **IEEE ITC 2025 Link:**[\[link\]](#)—**Published July 2025.**
 5. **Y. Maaod**, Transformer-Based Anomaly Detection in Satellite IoT: A Hybrid Approach with Rotary Embedding and Kernelized Attention. **IEEE ITC 2025 Link:**[\[link\]](#)—**Published July 2025.**
 6. **Y. Maaod**, Advancing Real-Time Military Aircraft Detection: A Comprehensive Comparative Benchmark of Object Detection Frameworks. **IEEE ITC 2025. Link:**[\[link\]](#)—**Published July 2025.**
 7. **Y. Maaod**, Leveraging Large Language Models for Smart Pharmacy Systems: Enhancing Drug Safety and Operational Efficiency. **IEEE IMCOM 2025. Link:**[\[link\]](#)—**Published Feb 2025.**
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RESEARCH AND TECHNICAL EXPERIENCE

- AI Security Academy. Fulltime Deepfake Security Researcher** **August 2025 - Present**
- Develop Python scripts to automate and accelerate deepfake research workflows.
 - Produce educational videos to raise public awareness about the dangers of deepfakes in scams.
 - Write investigative articles on real-world deepfake scams and cyber incidents.
 - Implement and maintain Deepfake Labs within the AI Security Academy platform.
- Test and evaluate new labs and courses to ensure quality and impact before release.

- AI Security Academy. Deepfake Security Researcher intern** **June 2025 - August 2025**
- Designed realistic deepfake attack scenarios for training and research.
 - Created detection challenges and awareness materials for healthcare, finance, and corporate sectors.
 - Investigated real-world incidents and their technical attack methods.

- Galala University. Part Time Software developer** **May 2025 - September 2025**
- Automated the university's clinical operations by developing automation clinical system, improving efficiency and reducing manual data entry by approximately 90%.

- Egyptian Space Agency. AI Researcher intern** **Sept 2024 - June 2025**
- Developed an automated radio-burst detection system from CALLISTO spectrograms, cutting classification time for 3663 images from ~2 months to seconds.
 - Created data pipelines for web-scraping, preprocessing, and noise reduction.
 - Trained CNN, ViT, Swin, ConvNeXt models with cross-validation.
 - Deployed YOLOv10/YOLOv11 for real-time classification and automated sorting.
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PROJECTS

Explainable AI-Based Enhanced Classification of Gravitational Wave Anomalies Using Vision Transformers

- Developed XAI ML pipeline using ViT + Swin with SHAP/LIME for interpretability.

Egyptian Space Agency. Radio Burst Detection System: CALLISTO Observatory Data & Deep Learning

- Developed a Python-based real-time system for spectrogram image detection using YOLO models.
- Developed custom web-scraping and Python scripts to collect, clean, and re-annotate e-Callisto data.
- Integrated Vision Transformers, pre-trained models, and CNNs for comprehensive performance benchmarking.

Egyptian Space Agency Training. Ionospheric Forecasting Using GNSS Observation

- Designed BiLSTM/BiGRU models to forecast VTEC from solar activity.
- Improved accuracy through outlier removal, resampling, and hyperparameter tuning.

Digital Egypt Pioneers Initiative - DEPI. Artificial Vincent Van Gogh

- Led DCGAN + neural style transfer project to generate images in Van Gogh's style.

SKILLS

- **Programming Languages:** Python, C++, SQL
- **Artificial Intelligence:** Machine Learning, Deep Learning, Object Detection, NLP, Transformers
- **Computer Vision:** OpenCV, Roboflow, You Only Look Once (YOLO)
- **Others:** Git, GitHub, Jupyter Notebook, HuggingFace
- **Frameworks:** Tensorflow, Pandas, Numpy, Pytorch, Scikit-Learn, Keras
- **Science:** Astronomy, Space Weather, Space Environment, Physics, Mathematics, Astrophysics, Solar Physics, Statistics
- **Soft Skills:** Leadership, Public speaking, Teamwork, Academic Writing

LEADERSHIP AND VOLUNTEERING

SDG-AI. International Conference Organizer

December 2024

- Organized the First International SDG Conference and Third AI Sciences Conference at Galala University.
- Managed logistics and coordinated with local and international speakers.

NASA Space Apps Cairo 2024-2025. Competition Volunteer

June 2024 - October 2025

- Managed the judging system and score calculations for accurate results.
- Served as Discord server administrator, ensuring smooth event communication and support for 797 participants.
- Developed NASA Intelligent Discord Assistant Chatbot (N.I.D.A.C) and integrated it into the event's Discord server to provide participants with guidance and competition information.
- Created and managed two Discord communities for the virtual hackathon and virtual bootcamp.

Hult Prize Galala University. Logistics Volunteer

Feb 2024 - March 2024

- Developed a scoring application for Hult Prize Galala University, reducing score calculation time by 83.3% and managed IT operations to support smooth event execution.

IEEE Galala University SB. Technical Head

Feb 2024 - March 2024

- Led the technical committee at IEEE Galala University Student Branch, managing team consisting of 8 volunteers.
- Organized 4 technical workshops with a total of 69 attendees.

CAISAIS 2023. International Conference Organizer

September 2023

- Served as on-site organizer for the 2nd CAISAIS 2023 International Conference.
- Administrated the conference's LinkedIn page, engaging a global audience.

COURSES

- Microsoft Machine Learning Engineer Track—Digital Egypt Pioneers Initiative - DEPI  (160 Hours)
- Deep Learning Specialization—Deeplearning.ai  (125 Hours)
- Machine Learning Specialization—Deeplearning.ai, Stanford University  (94 Hours)
- Space Environment & Space Weather Training—Egyptian Space Agency  (60 Hours)
- Astronomy: Exploring Time and Space—The University of Arizona  (43 Hours)
- Data-driven Astronomy—The University of Sydney  (22 Hours)
- Machine Learning In Healthcare Training—TachyHealth  (16 Hours)
- What is Innovation—Arizona State University  (10 Hours)
- Healthcare Digital Twin & Industry 4.0 Training—SDG Innovation Network (Canada) & Galala University International Collaboration  (In Progress)

REFERENCES AVAILABLE UPON REQUEST