eyadgad.github.io
eyad.gad@outlook.com

Eyad Gad

github.com/eyadgad
linkedin.com/in/eyadgad

Work & Relevant Experience

AI Researcher — **May 2025 — Present**
NORDIK Institute — *Sault Ste. Marie, Canada*
- Collected, cleaned, and prepared a 10-year Twitter dataset for analysis and LLM fine-tuning.
- Developed a Financial Stress Index for Canada using NLP and ML techniques (e.g., BERT-based models).

Graduate Teaching & Research Assistant — **Sep 2023 — Dec 2024**
The University of Western Ontario — *London, Canada*
- **TA** for Computer Networks, Python, and Java courses.
- As a **TA**, developed automated testing frameworks in C++, improving grading efficiency by 60% for 200+ students.
- Reviewed Federated Learning challenges in IoT networks and developed a comparative approach in cybersecurity.
- Proposed a novel Deep Learning training optimization, reducing training time by 72% with only 1.6% accuracy loss.

Intern Researcher — **Feb 2022 — May 2023**
Centre for Informatics Sciences — *Giza, Egypt*
- Conducted two research studies on detection of Alzheimer's Disease (AD) and segmentation of Breast Cancer (BC).
- Improved the accuracy of a baseline published study on AD by 10% and published a paper at MEDI.
- Utilized a segmentation CNN model for BC ultrasound in FL by accuracy of 96%, and published a paper at MIUA.

Intern AI & Embedded Software Developer — **Jun 2021 — Sep 2021**
Delta Care — *Cairo, Egypt*
- Implemented a temperature controller in C to regulate sperm temperature.
- Optimized interprocess communication for Python with C++, and Python with C, reducing response delay by 70%.
- Utilized YoloV5 and DeepSort for detecting and tracking sperm movement in motility analysis by accuracy of 91%.
- Utilized MaskRCNN for performing instance segmentation on sperms in morphology analysis by accuracy of 87%.

Education

Master of Science in Computer Science, *The **U**niversity of **W**estern **O**ntario, Canada* — **Sep 2023 – Dec 2024**
Bachelor of Applied Science in Computer Engineering, *N**i**le **U**niversity, Egypt* — **Sep 2018 – May 2023**

Selected Publications

Explore more papers at scholar.google.com/citations?user=Vmjcp8gAAAAJ

REDUS: Adaptive Resampling for Efficient Deep Learning in Centralized and Federated IoT Networks — ICC2025
Communication-Efficient and Privacy-Preserving FL Via Joint Knowledge Distillation and Differential Privacy — TVT2024
A Robust Federated Learning Approach for Combating Attacks Against IoT Systems Under non-IID — SmartNets2024
A Novel Approach to Breast Cancer Segmentation using U-Net with Attention Mechanisms and FedProx — MIUA2023
Deep Learning-Based Context-Aware Video Content Analysis on IoT Devices — Electronics MDPI2022

Selected Projects

Explore more projects at github.com/eyadgad

Computer Vision
- Brain Tumor Segmentation via 3D UNet and Digital Image Processing
- Advanced Lane Detection Based on Digital Image Processing
- Detected Alzheimer's Disease Based on Clinical and Neuroimaging

Federated Learning & Data Science
- Breast Cancer Segmentation Using UNet and FedProx
- Federated Learning Based IoT Attack Detection in IID and Non-IID
- GUI-Based Shopping System with Database Integration

Computer Systems & Networking
- Designed IoT-Based Smart Home System with Cloud Interface
- Implemented IoT-Based LED Control System
- Multi-Node Messaging System Using Sockets and Threading

Skills

Programming Languages	Python (Proficient), C/C++ (Familiar)
Data Science & AI	Data Science, Computer Vision, Federated Learning, LLM
Backend & Cloud	Flask, FastAPI, PySpark, Git, GCP, AWS
Computer Systems	Embedded Systems, IoT, IC Digital Design
Computing & Networking	Socket Programming, Parallel Computing, Threading, Multiprocessing