

Omar Abdelaziz Morgan Abdelaziz

Graduate Research and Teaching Assistant

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📄 <https://scholar.google.com/citations?user=pY9RyXMAAAAJ>

PROFESSIONAL SUMMARY

PhD student in Computer Science at UBC focusing on single object tracking and domain generalization. Experienced in machine learning research, software engineering, and academic teaching with a strong background in computer systems.

WORK EXPERIENCE

Irving K. Barber Faculty of Science, UBC, Kelowna, BC Sep 2022 – Present
Research and Teaching Assistant

Working on single object tracking, domain generalization, and secondary use of medical data.

- Published three single object tracking papers in Q1 journals.
- Worked with the Digital Transparency Research Excellence Cluster in secondary use of medical data and had an accepted paper on secondary use of medical data.

Synthesis Health Inc., Kelowna, BC Nov 2025 – Feb 2026
Machine Learning Scientist (Intern)

Spearheaded the development of a clinical text correction engine using Large Language Models (LLMs) and custom Natural Language Processing (NLP) algorithms.

- Transitioned a brittle, monolithic LLM architecture into a robust, specialized multi-agent pipeline ("Spotter" and "Proposer" agents), significantly improving error detection accuracy and system reliability for medical reports.
- Designed a tiered processing pipeline combining a zero-latency deterministic rule engine (Regex and dictionary lookups) with a deep-learning LLM layer to optimize both speed and precision.

Genesis AI Corp Sep 2024 – Dec 2024
Machine Learning Intern

Worked on extracting information from geographic rasters using machine learning algorithms.

- Worked with challenging datasets.
- Used advanced augmentations such as SMOTEGAN.

Ain Shams University Sep 2021 – Sep 2021
Agile Software Engineering Teaching Assistant

Ejada Systems Ltd. Aug 2021 – Aug 2022
Integration Software Engineer

Used the IBM API Connect tool as a middleware.

- Wrote scripts to automate tasks like mapping in API Connect and swagger generation from spreadsheets.

IBM, Remote Sep 2020 – Oct 2020
Artificial Intelligence Trainee

Introduction to machine learning technologies including NLP and Computer Vision.

EDUCATION

Ph.D. in Computer Science in Computer Science Present
University of British Columbia, Canada

M.Sc. in Computer Science in Computer Science 2024
University of British Columbia, Canada

B.Eng. in Computer and Systems Engineering in Computer and Systems Engineering 2021
Ain Shams University, Egypt
GPA: Excellent with honors

SKILLS

TypeScript Python React PostgreSQL Technical Writing Machine Learning Git

PROJECTS

Automatic Grading System

Developed an automatic grading system for Java code questions using Google Gemini API.

Technologies: Java, Python, Google Gemini API

Speech2Face

Implementation of MIT 2019 paper: Learning the Face Behind a Voice.

Technologies: Audio encoder, Face decoder

PyFlow Deep Learning Framework

Deep learning framework implemented from scratch using Python supporting CNNs.

Technologies: Python, CNN

Content-based Multimedia Retrieval System

Relational database design and GUI implementation for multimedia retrieval.

Technologies: JavaFX

Simultaneous Equation Solver

C++ program to solve up to 100 simultaneous equations.

Technologies: C++

Simple CPU Scheduler

Simulation of process allocation algorithms with reactive GUI.

Technologies: C++, QT

MIPS Assembler

Converter from MIPS assembly to binary code.

Technologies: C++ STL

PUBLICATIONS

- **Secondary use of health data: applications, models, algorithms, and ethical considerations** 2026
M Soliman, O Abdelziz, A Radwan, MS Shehata, C Ronquillo, K Shearer
AI and Ethics
- **MoE²: A Mixture-of-Mixtures of Experts for Ensemble-Free Domain Generalization** 2025
A Radwan, M Soliman, O Abdelaziz, A Abdel-Qader, MS Shehata
Proceedings of the AAAI Conference on Artificial Intelligence
- **STTATrack: Enhancing One-Stream Single Object Tracking via Score Temporal Token Attention** 2025
O Abdelaziz, M Soliman, A Elgazwy, MS Shehata
2025 IEEE/ACS 22nd International Conference on Computer Systems and Applications (AICCSA)
- **Learnable Laplacian Embedding Decomposition for One-Stream Visual Object Trackers** 2025
Omar Abdelaziz, Mahmoud Soliman, Mahmoud Alaa, Mohamed S Shehata
2025 14th Mediterranean Conference on Embedded Computing (MECO)
- **Beyond traditional visual object tracking: a survey** 2024
O Abdelaziz, M Shehata, M Mohamed
International Journal of Machine Learning and Cybernetics
- **FedDG-MoE: Test-Time Mixture-of-Experts Fusion for Federated Domain Generalization** 2024
A Radwan, M Soliman, O Abdelaziz, M Shehata
Proceedings of the Computer Vision and Pattern Recognition Conference
- **DMTrack: learning deformable masked visual representations for single object tracking** 2024
O Abdelaziz, M Shehata
Signal, Image and Video Processing
- **SkipTrack: Learning Essential Skip Connections for Robust Single Object Tracking** 2024
O Abdelaziz, MS Shehata
International Japan-Africa Conference on Electronics, Communications, and Computations (JAC-ECC)
- **A Novel Bounding Box Regression Method for Single Object Tracking** 2024
O Abdelaziz, MS Shehata
International Conference on Intelligent Systems, Blockchain, and Communication Technologies

CERTIFICATIONS

Hugging Face AI Agent Course — [Hugging Face](#)

Deep Learning Specialization — [Coursera](#)

Computer Vision Nanodegree — [Udacity](#)

TensorFlow in practice Specialization — [Coursera](#)

How to Create a website — [Udemy](#)

Angular 10: The complete guide — [Udemy](#)

LANGUAGES

[English \(Advanced\)](#) [Arabic \(Native\)](#)