

# Khaled A. IBRAHIM

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## EDUCATION

### Data Science — *Bachelor of Science*

OCT 2021 - JUNE 2025

Faculty of Computers & AI

GPA: 3.74

Cairo University, Giza, Egypt

**Relevant Coursework:** Machine Learning - Introduction to Data Science - Mathematical Optimization - Operating Systems  
Database Systems - Advanced DB - Software Engineering - Algorithm Design & Analysis - Object Oriented Programming

## WORK EXPERIENCE

### Nestle Business Services — *Intern*

JULY 2023 - SEPTEMBER 2023 – CAIRO, EGYPT

- Contributed to the initial exploration of AI solutions for Nestle's H2R Contact Center.
- Conducted in-depth research on various machine learning models, including advanced language and text-embedding models.
- Deployed a demo AI-powered application, leveraging Python, Eel, PyInstaller, Sentence Embeddings, and PyTorch.

### Syncore LLC — *Junior Web Developer*

SEPTEMBER 2019 - AUGUST 2022 – REMOTE

- Engaged in an Agile environment, where I was focused on writing clean, well-documented code to ensure maintainability.
- Utilized the best suited technologies for each project, which allowed us to achieve average Lighthouse scores of 97%+.
- Actively engaged in the design process, collaborating with designers and clients to create user-friendly and intuitive web pages.

## TECHNICAL PROJECTS

### Project — *Representing & Verifying Workflow Nets Using C++*

APRIL 2023 - PRESENT

- Translated complex mathematical concepts into a practical C++ Data Structure for business process analysis.
- Programmatically Created SVGs to develop clear visualizations of Petri Net systems.
- Deployed a user-friendly ReactJS frontend, powered by a C++ backend on Azure.

### University Assignment — *Analyzing Walmart Weekly Sales*

MAY 2023 - JUNE 2023

- Executed a detailed Exploratory Data Analysis, uncovering critical patterns and trends across 3+ key metrics.
- Developed multiple machine learning models to predict weekly sales, including Linear Regression, Random Forest, and XGBoost.
- Using multiple criteria, performed model selection to choose the best model suited for the underlying problem.

### Project — *Polynomial Differentiation using Linear Algebra*

JULY 2022 - AUGUST 2022

- Wrote a custom parsing algorithm to convert a polynomial expression into a matrix.
- Implemented a differentiation algorithm using the matrix representation of the polynomial.
- Developed a user-friendly frontend using KaTeX, HTML and TailwindCSS to display the results.

### Project — *Diabetes Prediction using Classical ML*

APRIL 2022 - MAY 2022

- Collaborated with pharmacists to deepen my understanding of the data and intricacies of the problem during the EDA phase.
- Conducted thorough data cleaning and feature engineering to enhance machine learning model performance.
- Implemented and finely tuned a Logistic Regression classifier, achieving an accuracy rate of over 90%.
- Developed and deployed a simple astro application powered by a Flask backend on Microsoft Azure.

## VOLUNTEERING & ACTIVITIES

### MIOM FEPS-CU — *Research & Documentation Member*

JAN 2023 - PRESENT

- Creating reports using existing data for migration research, contributing to insights on migration patterns aligned with SDGs.

### ICPC FCAI-CU — *Competitive Programming Mentor*

APRIL 2023 - AUGUST 2023

- Managed a group of 20+ students in Competitive Programming for the ICPC community.
- Facilitated weekly up-solving sessions, empowering team members to tackle 3-5 complex programming problems.
- Exhibited proficiency in C++ and Data Structures while instructing team members on solving programming challenges.

## SKILLS

**Languages & Tools:** Python - SQL - NoSQL - C/C++ - TypeScript - JavaScript - Git - Docker - Microsoft Azure

**Data Science:** NumPy - Pandas - Matplotlib - Seaborn - TensorFlow/Keras - PyTorch

**Web Technology:** ReactJS - NextJS - Firebase - Microsoft Azure - TailwindCSS

**Soft Skills:** Analytical Thinking - Leadership - Communication - Time Management