Nabeel Zamel

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LinkedIn | GitHub Profile

EDUCATION

ALEXANDRIA UNIVERSITY — ALEXANDRIA , EGYPT

Bachelor of Engineering — 2020-2025

Major in Computer and Communication; Minor in Artificial Intelligence

Cumulative GPA: 3.44/4.0 (EXCELLENT); Graduation Project: A+

Relevant Coursework: Data Mining, Software Engineering; Operating Systems; Algorithms; Artificial Intelligence; Machine Learning; Computer Vision; NLP; Data Mining

WORK EXPERIENCE

Ejada Systems — ALEXANDRIA , EGYPT

Junior Software Engineer in Core Banking Team — September 2025 – Present

- Contribute to the development and customization of **core banking solutions** using **Temenos** tools, ensuring alignment with client business requirements.
- Develop and maintain **backend services** using **Java**, integrating with **databases** through **JQL** for efficient data retrieval and manipulation.
- Work extensively with **APIs** to support seamless communication between core banking modules and external systems.
- Collaborate with cross-functional teams to analyze business processes, implement enhancements, and resolve production issues in line with banking regulations and standards.

Vodafone Smart Village — CAIRO , EGYPT

Ai Intern in eShop Team — July 2024 – August 2024

Vodafone Egypt eShop Recommendation System using ML algorithms

Developed a product recommendation system using Python. Scraped product data via sitemap traversal with `requests` and **`BeautifulSoup`**. Applied clustering algorithms with **`scikit-learn`** to generate content-based recommendations.

UNIVERSITY PROJECTS

Computer Vision & Deep Learning Projects:

Driver Distraction Detection Using LoRA – Based Federated Learning and Fine Tuning For Privacy-Preserving AI

(Graduation Project)

- Developed an innovative **privacy-preserving driver distraction detection system** leveraging **Vision Transformers (ViT, Swin)** for image-based recognition and **Action Transformers** for video-based action recognition. Implemented **Low-Rank Adaptation (LoRA)** on 26 client models and a global model within a **federated learning** framework.
  Enhanced global model performance by integrating **client training loss** and **KL Divergence** into the aggregation equation, balancing client contributions and aligning local–global distributions. For videos, SlowFast networks utilized for spatiotemporal feature extraction, achieving accurate behavior recognition while preserving data privacy.
  Currently preparing a research paper based on this work, which is in the process of publication.

Image-Captioning-and-Live-Captioning

review project's repo

Built an image captioning system using InceptionV3 for feature extraction and an LSTM-based decoder for text generation. Implemented Greedy and Beam Search strategies for captioning and evaluated performance with BLEU scores. Enabled live caption generation from webcam input. Used the Flickr8k dataset for training and testing.

Face Detection Recognition for Celebrities and adding not identified class

review project's repo

Developed a **real-time face recognition system** using **OpenCV** and **TensorFlow**, combining **OpenCV DNN** for face detection with a **pre-trained CNN** for embedding generation. Implemented **cosine similarity** for classification with a "not identified" class, supported **dynamic dataset updates**, and integrated **live webcam** streaming for accurate predictions.

.Augmented Reality with Planar Homographies and Image Mosaics and Stitching part1 part2

Part 1 – Augmented Reality with Planar Homographies:
Implemented AR by detecting a planar object (e.g., a book cover) in a video using SIFT keypoints, computing homographies via RANSAC and SVD, and overlaying augmented video frames onto the detected region with perspective warping.
Part 2 – Image Mosaics and Stitching:
Constructed panoramas by stitching two and three images using SIFT-based feature matching and homography estimation. Implemented forward and inverse warping to minimize artifacts.

Road Lane Detection

Loaded road images and applied median filters to smoothen the images. Used Canny algorithm for edge detection and defined regions of interest. Applied Hough Transform to detect straight lines in the road images.

NLP Projects:

BERT For Masked Language Modeling on English Wikipedia Data

Trained a custom BERT model from scratch on the English Wikipedia dataset. Preprocessed data and trained a Byte Pair Encoding (BPE) tokenizer. Implemented a masked language modeling pipeline with a custom data collator. Trained a BERT architecture. Evaluated using Top-10 token accuracy and F1 score.

Sentiment Analysis on English tweet

review project's repo

Performed sentiment classification on the Sentiment140 dataset using scikit-learn (Naive Bayes with TF-IDF), TensorFlow (LSTM), and Hugging Face Transformers (BERT). Applied standard NLP preprocessing techniques.

Software Projects:

Property Connect Website

Developed a full-stack web platform, 'Property Connect Website,' designed to streamline property listings and management for a diverse user base, including buyers, sellers, and renters. The project involved creating a responsive user interface for seamless property discovery, implementing robust back-end APIs for secure data handling, and integrating advanced features such as user authentication, dynamic search filters, and administrative controls.

ACTIVITIES

Professional Tennis Player — EG,EGYPT
2010– Present

- Ranked in the Egyptian Tennis Federation since the age of 12.
- Competing professionally since 2010.
- Smouha's first team Player.
- Winner of multiple tournaments with notable achievements.

Roteract Member — ALEXANDRIA, EGYPT
Committee Member — 2020 – Present

- Active member of the Rotaract Club, dedicated to developing professional and leadership skills through community and international service initiatives.

ADDITIONAL

Technical Skills: Advanced in SQL, PostgreSQL, JQL, Python, JAVA, GO, Data science and Analysis, Artificial Intelligence, Machine Learning, Computer Vision, Deep Learning, NLP, Problem Solving, OOP, Statistics and Probability, Git/GitHub, API Development & Integration, Distributed Systems & Microservices

Business Skills: Data-Driven Decision Making, Personalization Strategy, Financial Domain Knowledge, Risk Management

Languages: Fluent in Arabic, English

Certifications & Training: Online Course in Artificial Intelligence (AMIT) , Orange smart village winter Internship