Peter Atef

Software Engineer
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Education

Cairo University **Sep. 2019 – Present**
Bachelor of Computer Engineering, ***GPA: 3.6 of 4 (Excellent Grade)*** *Graduation Year: 2024*

Technical Skills

Programming Languages: C++,C, Python, JavaScript, Dart
Data analysis: NumPy, Pandas, Matplotlib, OpenCV, Scikit-learn, Streamlit
AI: Keras, PyTorch, Langchain, OpenAI, Hugging Face, Vector databases, Streamlit.
Databases: MySQL, Firebase, MongoDB, Vector databases.
Developer Skills: MATLAB, Github, Linux
Others: Microsoft Office, Teamwork, Presentation Skills.

Relevant Courses

- OOP
- Data Structures and Algorithms
- Harvard CS50's Database
- Operating systems
- Image Processing
- Harvard CS50's Artificial Intelligence with Python
- NLP
- Networks
- Probability and Statistics
- Discrete Math
- Computer Architecture
- Machine Learning
- Neural Networks
- Flutter
- React-Native
- Agile methodology (Scrum)
- Parallel Computing
- Big Data

Experience

VNCR Media Group **1/7/2023 - 1/10/2023**
Generative AI Internship *England - remote*

- It's a great experience to be part of a company outside Egypt and have the chance to work on very interesting projects and meet new people worldwide.
- **Technology used:** Langchain, Streamlit, OpenAI, Python, chromeDB, Faiss.
- Completion Certificate: **Link**
- Recommendation Letter: **Link**

Ejada **4/7/2023 - 17/8/2023**
Mobile Development Internship *Egypt - on-site*

- I'm a member of a mobile development team that is required to build complex mobile apps using React-Native and Android Kotlin.
- We built a lot of apps like Mnara El-Seha as a hospital system app. GitHub Repository
- Completion Certificate: **Link**

NVIDIA **2022**
Machine learning Intern *Egypt - remote*

- Learning Fundamentals of Deep from engineers working at NVIDIA by applying on the supervised learning's pipeline using NVIDIA GPUs.
- NVIDIA DLI Certificate for the successful completion of Fundamentals of Deep Learning. **Certificate Link**

ITI Egypt **09/2022 - 10/2022**
React-Native Summer Training *Egypt - remote*

- Learning React-Native fundamentals: dealing with mobile UI, Context, Redux
- Building Todo app. **Project Link**
- Building e-commerce system. **Project Link**
- **Certificate Link**

ITI Egypt **08/2022 - 09/2022**
AI Summer Training *Egypt - remote*

- Learning Linear algebra fundamentals.
- Learning Probability fundamentals.
- Learning Machine-learning fundamentals .

- Learning deep learning basics.
- **Certificate Link**

The National Telecommunication Institute (NIT) **07/2021 - 08/2021**

AI Summer Training *Egypt - remote*

- Learning data analysis using Python using Numpy, Pandas, and Matplotlib
- Learning how to deal with supervised learning models.
- **Certificate Link**

Machine Learning Projects

KidAI | *Unity, Agile, Python, C sharp, machine learning, Github* **In development**

- This is the graduation project that I'm currently working on which is a tool that teaches machine learning to kids from 8 to 18 years old using games!!
- The idea is to go through the machine learning pipeline starting from creating the data set and going through the training and validation process then testing the machine learning model inside the game environment.
- Skills: Responsive Mobile app and desktop - Unit Testing - Teamwork.

Arabic Text Diacritization model | *NLP, machine learning, Python, PyTorch* ***Project Link***

- One of the aspects that differentiate Arabic is diacritics. Diacritics are short vowels with a constant length that are spoken but usually omitted from Arabic text as Arabic speakers usually can infer it easily. The same word in the Arabic language can have different meanings and different pronunciations based on how it is diacritized. Getting back these diacritics in the text is very useful in many NLP systems like text-to-speech (TTS) systems and machine translation as diacritics remove ambiguity.
- We used two approaches to solve the problem: the first is to use a recurrent neural network (Bi-LSTM) with an embedding layer and the second approach CBHG architecture. You can find all the details about the project in the project repo on GitHub.

Virtual Calculator | *Image processing, OpenCV, machine learning, Python, Threading* ***Project Link***

- Machine learning project to build a real-time hand-detection project to detect the numbers and the arithmetic operations.
- We used SVM as a machine learning model and we got an accuracy of 90 percent.
- **My Role**: pre-processing "image enhancements", Accuracy Calculations

Hand Gesture Recognition | *Image processing, OpenCV, machine learning, Python* ***Project Link***

- A machine learning model to detect the numbers constructed with a hand with pre-processing on the image to enhance the accuracy which is the most challenging part because the data set is so noisy. The pre-processing part is to extract the hand from the image with maximum accuracy. In the feature extraction part, we use HOG and LBP. Also, we use PCA for feature extraction. We use SVM as our machine learning model.
- **My Role**: pre-processing which includes extracting the hand from the image using GMM and K-means. Also, I implemented the LBP algorithm in the feature extraction module.

Color detector | *Pandas, OpenCV, Python.* ***Project Link***

- I built a color detector for videos and images program using OpenCV and Pandas.

Honors / Awards

Orange Digital Center (ODC) **summer 2022**

Certificate Link *Project Link*

- I got a fourth place over about 50 other students in the Competitive Programming Hackathon by Orange Digital Center in C++.
- The competition was on a website called Coding Game on a game called Spider Attack.

Cairo University: Faculty of Engineering **Spring 2023**

Certificate Link *Project Link*

- My team and I got first place in Maze solving competition and second place in the line follower competition.
- The first competition was to build a car that follows the track line in minimum time and the second competition was to use the car to solve a maze in minimum time using the shortest route.
- **My Role**: I participated in building an Android native mobile application using Java to send a signal to the car representing the speed level of the car. The app was required to send a high-speed signal to the car whenever there is a straight line and a low-speed signal whenever there is a curve.
- **Technology used**: Java, OpenCV, Image Processing

Certificates (*Link)*