

# PETER ATEF

Software Engineer

Giza, Egypt

☎ +201212773495 ✉ [peter.atef2000@gmail.com](mailto:peter.atef2000@gmail.com) 🔗 [linkedin.com/in/peter-atef-b31651231](https://www.linkedin.com/in/peter-atef-b31651231) 🐙 [github.com/EngPeterAtef](https://github.com/EngPeterAtef)

## Education

### Cairo University

*Bachelor of Computer Engineering, GPA: 3.6 of 4 (Excellent Grade)*

Sep. 2019 – Present

Graduation Year: 2024

## Technical Skills

**Programming Languages:** C++, Python, JavaScript, C, Dart,  
**Mobile development:** Flutter, React-Native, Kotlin.  
**Data Analysis:** NumPy, Pandas, Matplotlib, OpenCV, Scikit-learn  
**AI:** Langchain, Agents, Chains, OpenAI  
**Databases:** MySQL.  
**Others:** Microsoft Office, MATLAB, Github, Linux

## Relevant Courses

- OOP
- Data Structures and Algorithms
- Harvard CS50's Database
- Operating systems
- Image Processing
- Harvard CS50's Artificial Intelligence with Python
- Neural Networks and Deep Learning from DeepLearning.AI
- Build Basic Generative Adversarial Networks from DeepLearning.AI
- Probability and Statistics
- Discrete Math
- Computer Architecture
- Machine Learning
- Agile methodology (Scrum)
- Flutter
- React-Native

## Experience

### Sequel Solutions

1/7/2023 - 1/10/2023

*Generative AI Internship*

*remote*

- It's a great experience to be part of a company outside Egypt and to have the chance to work on very interesting projects and meet new people from all over the world.
- **Technology used:** Langchain, Agents, Chains, OpenAI, Python.

### Ejada

4/7/2023 - 17/8/2023

*Mobile Development Internship*

*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 workshop*

*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*

*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*

*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*

*remote*

- Learning data analysis using Python using Numpy, Pandas, and Matplotlib
- Learning how to deal with supervised learning models.
- [Certificate Link](#)

## Machine Learning Projects

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### Virtual Calculator | *Image processing, OpenCV, machine learning, Python, Threading* [Project Link](#)

- Machine learning project to build a 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.

## Software Development Projects

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### Reddit Clone | *Flutter, Dart, Bloc, Agile, Github* [Project Link](#)

- Participated in developing the front end of a mobile application for Android using Dart and the Flutter framework.
- We were a team of twenty members containing backend, cross-platform, and DevOps sub-teams.
- Collaborated with team members using version control systems such as Git to organize modifications and assign tasks.
- **My Role:** System Authentication, Searching module, Setting, Unit testing
- Skills: Responsive Mobile app and website - Bloc Design Pattern- Unit Testing - Teamwork.

### E-Commerce System | *React-Native, JS, Context, Redux, Axios, Async-Storage, Github, Expo* [Project Link](#)

- I built an online Store that gets the product using API and gives you the option to add and remove them to your cart to buy them.

### Search Engine | *Java, OOP, Data Structures, Threading, MongoDB* [Project Link](#)

- Build a Search Engine using mainly three components Crawler, Indexer, and Ranker.
- **My Role:** I worked on the Indexer which is a pre-processing before storing the data in the DB, and I participated in building the website.
- we got first place among all teams in this project because of the high performance of the code and how it manages the resources.

### Hospital management | *C-sharp, SQL, MySQL, Database* [Project Link](#)

- Building a Hospital Windows application system.
- System capabilities: Handle multi-users, Handle the privileges of each user, Make appointments for the patient, and Keep track of the patient's medical history.
- **My Role:** I participated in building the DB scheme, I built screens like doctor, nurse, and patient screens.

### Logic Simulator | *C++, OOP, Data Structure* [Project Link](#)

- Built the application mainly for designing and simulating circuits, as well as saving, copying, cutting, pasting, restoring, undoing, and redoing actions.
- Dealt with several object-oriented programming (OOP) concepts, including polymorphism, inheritance, abstraction, and encapsulation.

### Game Engine | *C++, OpenGL, GLSL, CMake* [Project Link](#)

- Phase 1: Building a game engine using C++.
- Phase 2: Using the game engine to implement in a real game.
- **My Role:** I participated in building the search engine with my team which was a challenging task for us because we were implementing everything from scratch. Also, I build the lighting system in the game to control the game lights and finally, I participated in designing and implementing the game's main logic.

## Other Projects

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### OS scheduler | *C, Linux, Algorithms, Data Structure*

***Project Link***

- Utilized an operating system scheduler and Memory Management that scheduled different processes using the Shortest Remaining Time Next (SRTN), Highest Priority First (HPF), and Round Robin algorithms.
- My Role:** I was the team leader of this project. I was responsible for building the structure of the project and implementing HPF and RR algorithms.

### Five-stages-RISC-Pipelined-processor | *Computer Architecture, Verilog, Problem Solving*

***Project Link***

- Simulation to Processor Hardware using Verilog program and Model-Sim.
- My Role:** I was the team leader for this project - I designed the interface between different modules and how they will communicate with each other- I designed the instruction set - I built the decode stage in the project - I participated in building the core module that handles the interactions with different modules.

## Honors / Awards

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### 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*)

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### Flutter Course on Udemy

**2022**

*72 hour course*

*Certificate Link*

### Python Course on Mahra-Tech

**2023**

*Online Course*

*Certificate Link*

### Web development basics on Udacity

**February 2022**

*Certificate Link*