

# Fatima Khadra



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fatima khadra

## Education

American University of Beirut

Lebanon

*Professional Diploma in Artificial Intelligence and Data Science*

2023-Present

Al Maaref University

Lebanon

*Bachelor of Science, Major in Computer Science*

2020-2023

- GPA: 3.8/4.0
- Listed on Dean's list all semesters.

## Software Skills

- |                        |           |
|------------------------|-----------|
| ✓ Java                 | ✓ MySQL   |
| ✓ Python               | ✓ C++     |
| ✓ HTML/ CSS/ Bootstrap | ✓ MongoDB |
| ✓ .NET Core mvc        | ✓ Flask   |

## Projects

### 1. School Department Database

Al Maaref University

- Designed a database and modeled it based on the department's requirements.
- Entered the department's data using MySQL language.
- Designed different queries using MySQL to retrieve different information from the database.

### 2. Al Mahdi Schools English Teachers Management System

Al Maaref University

- Proposed a management system as a solution to the institute's problem.
- Applied requirement analysis to the gathered requirements as well as risk analysis.
- Designed the system's models: use case, class, activity and sequence diagrams.

Github link: <https://github.com/12-fwkhadra/Software-Engineering-Project.git>

### 3. Diabetes Data Analyses

AI Maaref University

Divided the project into two parts: the first worked on analyzing and modeling the dataset and the second part applied different decision tree algorithms on the dataset.

Part 1:

- Analyzed the dataset using Python Pandas libraries.
- Preprocessed -using Python Language- the dataset by handling missing values and detecting outliers.
- Evaluated the replacement approaches using different error rates to choose the optimal dataset to work on.
- Applied machine learning algorithms to finally predict whether a patient has diabetes or not. Sampled the dataset at different ratios, and at each ratio, applied the KNN algorithm using sklearn library. Then, deduced the best number of neighbors as well as the best sampling ratio based on their resulted classification matrices. The resulted k model is then fitted to the dataset for future predictions.

Part 2:

- Applied CART and ID3 algorithms on the dataset to produce its decision tree.
- Calculated the accuracy of each algorithm to find the most optimal for this dataset.
- Wrote a full report for each part to explain the procedures followed.

Github link: <https://github.com/12-fwkhadra/AI-project.git>

### 4. Blog website

AI Maaref University

The project built a website that allows the user to post questions about various topics, answer others and view a set of questions related to his followed topics.

- Built the website using the MVC template.
- Implemented different functions using C# so the user can sign in, log out, answer, ask, bookmark questions/answers and follow different topics.
- Connected the website to an SQLite backend database.
- Designed the pages of the website using HTML, CSS, and JS for a friendly user experience serving the different functionalities.

### 5. Polynomial Calculator

AI Maaref University

- Developed a calculator that adds and multiplies polynomials.
- Implemented Java data structures.
- Handled different exceptions and user-entry errors.

### 6. Comparative Study of Sorting Algorithms

AI Maaref University

- Implemented different sorting algorithms in a Java programming language aiming to find the optimal sorting algorithm for large n number of elements. The program runs the sorting algorithms and measures the average execution time of each at different array sizes.
- Used JSON format to store the data efficiently for later usages.
- Integrated different Python libraries for displaying the results.
- Compared the results of the simulation to the theoretical theories for an in-depth overview.
- Wrote a full report explaining the methodology of the project, the code implementation and the results.

Github link: <https://github.com/12-fwkhadra/Algorithm-Project-Final.git>

## Internships

### 1. CI/CD Pipeline Internship

July-August-2022

#### Eigentec

The tasks targeted evaluating 4 freshly written documentations about integrating Gerrit with Jenkins by trying the steps on an Ubuntu VM.

- Configured Jenkins and tested it by running different projects.
- Configured Gerrit and connected it to Jenkins by applying a Senior-developer example.

## Bootcamp

### 1. Data Engineering Bootcamp

July-September-2022

#### DgPad

The goal is to build a web application that presents the analysis of fetched data from Twitter platform.

- Fetch data from Twitter using python snsrape module and save it using MongoDB.
- Applied convenient queries on the data using pymongo.
- Visualized the results of the queries in charts using JS.
- Displayed the charts on a designed web page using Flask and json API.

Github link: <https://github.com/12-fwkhadra/Visualizer.git>

## Volunteering

### 1. Teaching Assistant

2022-present

#### Al Maaref University

Assist students in the OOP Java lab to code properly, find bugs and solve errors.

## Leadership Skill

Code\_it; Club at Al Maaref University

- Served as vice president of the club since November 2021.
- Led the team of 11 admins to hold different events (seminar, competition...) among the faculties by distributing tasks based on their different talents and abilities.

## Team Work Skill

### 1. Annual Robotics Competition

April 2019

Lebanese University

- Worked with a team of 4 members on building a prototype for an automated hydroponic system. The team ranked the 3<sup>rd</sup> nationally.
- Divided the jobs to utilize each member's strength, from programming, designing and writing reports.
- Programmed the automated hydroponic system using Python, HTML, Raspberry Pi using Python aiming to save spaces in an efficient monitored way.

### 2. World Robot Olympiad

August 2019

- Cooperated with a team of 4 on designing an automated storing system. The team ranked the first nationally and participated in the finales held in Hungary in the same year.
- Designed a Lego system that aims to store and cargos efficiently in less areas with automated trucks to fasten the delivering and storing process.
- Programmed together the system using Lego EV3, Arduino and Raspberry Pi using Python.

## Communication Skills

- An A student in Public Speaking Class.
- Fluent in English.
- Wrote all the official emails and reports for the Code\_it; Club and previous competitions.
- Won presentation competitions in high school and represented my team in different competitions.