# Youssef Samaan

ysamaan2001@gmail.com in/youssefsamaan github.io/Personal-website github.com/youssefsamaan

## Education

**Bachelor of Computer Science, GPA 3.8,** *McGill University* Sep 2021 – Dec 2024 | Montreal, Canada

Courses: Programming Lang & Paradigms (functional programming), Software Design, Databases, OS, Machine Learning, Algorithms and data structures, Software engineering project, Intro to software systems, Intro to computer science (OOP), Probability, Calculus3, Linear Algebra, and Discrete Structures, Statistics.

## Professional Experience

**Intern Data Science Analyst and Programmer,** *DermBiont* May 2022 – Jun 2022 | Boston, US

- Helped in the migration of the company's data from Dropbox to Sharepoint and from eLab to Benchling by writing functions to call APIs and by writing scripts to check if all the files were transferred.
- Wrote a program that renames files and folders and formats the data inside the **HTML** files so that the hyperlinks work.
- Wrote multiple scripts that found more than 25% differences between the values in the Excel file and the data in the **database**, then updated the values in the database.
- Wrote a **Socket** program so that the classifier files will have to be uploaded only once rather than having to re-upload all the classification files for every file that needs to be classified.
- Wrote a program that takes in an input file with multiple dictionary files, then **parses the data** and produces a report while also classifying the information into different sheets that corresponded to the dictionary files.

## Skills

**Programming languages:** *(Python, Java, Ocaml, MATLAB, C/C++, Bash, Unix/Linux, Git, HTML, CSS, JavaScript, SQL, NoSQL)*

**Frameworks/Libraries:** *(Numpy, Pandas, Django, React, Node.js, Maven, Spring-boot, JUnit, Express.js, Bootstrap, Tailwind.)*

## Projects

**Machine learning Projects**

- Project 1: Developed 3 classes, **Linear regression**, **logistic regression**, and **KNN**, from scratch. These 3 machine learning models were used to analyze the Energy Efficiency and Qualitative Bankruptcy data sets from ML at Berkeley.
- Project 2: Designed a **Multi-Layer Perceptron** class with **regularization** and different **activation functions** from scratch. And used it along with **CNN** class from **TensorFlow** to classify image data from the CIFAR-10.
- Project 3: Created **Naive Bayes Class** from scratch. And helped with fine-tuning the **BERT** model from **Huggingface** using **SimpleTransformers** and then analyzed the model and its **attention matrix** using the **Transformers** library. These were used along with other types of transformers to do sentiment analysis on the IMDB Movie Review Dataset.

**Splendor**

- Collaborated with 5 other team members to design, document, implement, and test a board game called Splendor.
- The game was Implemented using **Python** for the GUI and **Java**, **Maven**, and **Springboot** for the backend.
- LobbyService (which was used to register and log in players), the **SQL** as the database for the lobby service. The game can all be started up using **docker**.

**Movies Watched**

- Coded and deployed a website on **GitHub** that displayed the movies, shows, and anime that I enjoyed watching.
- Built it using **React**, **HTML**, **CSS, and JavaScript** and uploaded it on Netlify.

**Risk-Free Stock Trading Website**

- Created a web app that lets people test out their trading strategy or just see if they want to invest in the stock market for free.
- Used stock **API** from Finnhub to get real-time stock prices.
- Created the website using **Django** and deployed it on Heroku.

**Event Management System**

- Designed a Festival Management System that allows a person to create Festivals, Concerts, Workshops, Galas, Screenings, and Coming soon Events. Added extra functionality such as calculating profit and filtering.
- Used multiple software design patterns and principles, such as **encapsulation**, **flyweight**, **visitor**, and **polymorphism**, while also thoroughly **testing** my code with high **coverage**.

**Personal Website**

- Built this website using **HTML**, **CSS**, and **Javascript** to showcase my projects, skills, education, and experience.
- This website is also responsive to all devices and has a dark mode.

**Solar System**

- Programmed a realistic solar system in **Matlab**.
- Used the velocities and the force of each entity onto the other to calculate their new position.
- Used a non-elastic simulation for when two entities collide with each

## Interests

Traveling • Trying new food • Watching movies, TV series, and anime • Football • Swimming • Drawing