

Mahdi Zarour

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EDUCATION

Université de Montréal, Montréal, Québec, Canada (2020 - 2023)

- MSc in Computer Science
- **GPA:** 3.7/4.3
- **Coursework:** Fundamentals of Machine Learning · Probabilistic Graphical Models · Representation Learning · Theory of Deep Learning
- **Scholarships:** International Students Scholarship of value \$27,000 CAD

Université d'Oran 1, Oran, Algeria (2015 - 2020)

- Licence in Computer Science (equivalent of BS in Canada)
 - Top 5% of the program in GPA
 - Was offered a scholarship to study in Hungary but had to decline to come to Canada
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PROJECTS

CodeML Hackathon by Polytechnique Montréal (October 2022)

- First Place in a hard challenge
- Used artificial intelligence to develop a model (**CNN**) for Image-Based Plant Disease Detection
- Won \$1,000 CAD worth of prizes

GPT3 based Q&A bot (April 2023)

- Developed a chat bot for a dental clinic using **OpenAI API** (GPT3) to answer questions about dental aligners from a 400 pages book
 - Added a speech to speech wrapper using **Microsoft Azure API** to ask the bot and receive answers via voice
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PROFESSIONAL EXPERIENCE

Beam Me Up Inc.

Student Researcher (2021 - 2022)

During my master's project, the goal of my research was to develop a means to detect cognitive distraction. I created an experiment in **Virtual Reality** (VR) using **Unity** to collect data from participants. Later, I collected data from 31 participants wearing both an EEG headset and a VR headset while completing the experiment developed previously. Finally, I analyzed the data and used machine learning to create a model able to detect distraction using EEG and Eye Tracking data.

Highlights:

- Developed a Virtual Environment in Unity using **C#** language
- Successfully conducted experiments on 31 participants in a laboratory
- Analyzed data using popular data science libraries including: **Numpy, Pandas, advanced Scikit-learn, Scipy, Matplotlib, Pytorch**
- This project led to my first paper publication: https://link.springer.com/chapter/10.1007/978-3-031-32883-1_44

Université de Montréal

Teaching Assistant (2021)

- Held weekly lab sessions, office hours, and was responsible for grading of homeworks and projects
- Introduction to Programming (Winter 2021), Software Engineering (Summer 2021)

Freelancer

Telegram Store Bot (May 2023)

- Developed as a freelancer a Telegram Store in python to deliver digital and physical products
 - The bot accepts card payments as well as cryptocurrencies
 - Created an **SQLite** database to manage users, transactions, and other data
 - Successfully developed and delivered our client bot with **Heroku** for \$6,000 CAD
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ACADEMIC PUBLICATIONS

- Zarour, M., Ben Abdesslem, H., Frasson, C. (2023). **Distraction Detection and Monitoring Using Eye Tracking in Virtual Reality**. In: Frasson, C., Mylonas, P., Troussas, C. (eds) Augmented Intelligence and Intelligent Tutoring Systems. ITS 2023. Lecture Notes in Computer Science, vol 13891. Springer, Cham. https://doi.org/10.1007/978-3-031-32883-1_44
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SKILLS & TECHNOLOGIES

- Popular Data Science, Machine Learning, and Deep Learning tools: Python · Numpy · Scipy · Pytorch · Pandas · Scikit-learn · matplotlib
- Modern Deep Learning architectures: MLP · CNN · RNN · Transformers · GAN · LLM · Latent Diffusion Models
- Other tools: Java · SQL · PostgreSQL · Heroku · Unity · C#