MOUHAMMAD BAZZI

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EDUCATION

ILLINOIS INSTITUTE OF TECHNOLOGY, CHICAGO, IL 2022 - 2023
Master of Artificial Intelligence
GPA: 4.0 | Courses: Machine Learning, Deep Learning, Natural Language Processing, Big Data Technologies, Computer Vision, Advanced Artificial Intelligence, Advanced Data Mining, Data Preparation and Analysis, Online Social Media Analysis

CY TECH, CERGY, FRANCE 2020 - 2023
Master of Engineering Applied Mathematics, Data Science
Degree in engineering mathematics applied to computer science (specialization in Data Science)

LYCEE SAINT-LOUIS, PARIS, FRANCE 2018 - 2020
2-Year Bachelor (Mathematics, Physics, Engineering)
CPGE (two-year intensive program preparing for the national competitive exam for entry to French engineering schools), ranked top 10% June 2020

EXPERIENCE

Data Engineer Intern Summer 2022
GreenCookie Paris, France

- Built from scratch all the backend of a web extension in order to release a prototype product (completed in 4 months)
- Designed and developed a database in order to collect the data captured by the extension (deployed on Heroku and operational) (SQL, MySQL)
- Developed and deployed a secure and well-documented API Rest to link the database and the extension (deployed on Heroku and operational) (Python Flask Swagger)
- Designed a scientific model to calculate a carbon impact thanks to several variables gathered through the web navigation of the user (two models proposed after doing several searches)

PROJECTS

Facial Image Inpainting Spring 2023
Illinois Institute of Technology Chicago, USA

- Developed a *facial image inpainting* algorithm, focusing on reconstructing missing or damaged facial regions using advanced deep learning techniques using PyTorch and TensorFlow
- Implemented a cutting-edge technique inspired by recent research (2023) that utilizes the Nested Deformable Multi-Head Attention (NDMHA) layer. This enables the network to capture long-term dependencies and contextual relationships, resulting in highly realistic and accurate facial image inpainting.
- Achieved promising results, demonstrating the superiority of the NDMHA-based model over the baseline U-net autoencoder in terms of its reconstruction capabilities

Framework-Free Neural Network Implementation October 2023
Illinois Institute of Technology Chicago, USA

- Implemented and tested a neural network from scratch without using any deep learning frameworks such as Keras, TensorFlow or PyTorch
- Built from scratch the computation graph and its forward and backward traversal in the program (without support for dynamic configurations), gaining a deep understanding of the fundamental principles behind deep learning algorithms
- Created a robust training procedure, including a loss function, evaluation function, and stochastic gradient descent algorithm with adjustable learning rate and decay parameters, enabling effective optimization of the model weights.

Industrial Dynamics of A.I. 2021 - 2022
CY Tech Cergy, France

- Led a group in a project aiming to create a European database on everything linked to the sector of artificial intelligence (companies, employees, etc.) to analyze it
- Scraping Glassdoor job offers (artificial intelligence and others) and cleaning up the collected data to create a reliable database: thousands of job offers were collected (Python, Web Scrapping, Data pre-processing, NLP)
- Managed to find a structure or rules in the database using classification models (R, Data pre-processing)

SKILLS

Languages: French (Native), Arabic (Native), English (Fluent), Spanish (Basic), Italian (Basic)
Software, IDE, and tools: Excel [VBA, Pivot, etc.], Linux, Visual Studio Code, Jupyter Notebooks, Git, Eclipse, Hadoop, Pig, Hive
Computer languages: Python [TensorFlow, PyTorch, Selenium, BeutifulSoup], R, SQL, C# [Unity], Scala, Java, Web Development