Projects Overview

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Project 1 :
Material Based Semantic Segmentation

⚲ Graduation internship at the Hydrogen Research Institute (University of Quebec)

📰 **Duration :** > 6 months, from February 2021 to September 2021

Subject :

Segmentation of a 3D mapping of an indoor environment by the materials visual aspect.

This project aims to improve the artificial vision of an anti-covid-19 disinfectant robot.

The main tasks completed in 6 months :

- Research in the recent and the most relevant Deep Learning and Semantic Segmentation papers and reviews.
- Data gathering
- Annotation and preparation of our custom dataset.
- Model training and testing using an Amazon Sagemaker notebook instance.
- Comparing the chosen models performance (DeepLabV3+, PSPNet, U-Net, SegNet, FCN, GCN, UperNet) in our custom use case u
  using different model backbones (ResNet-18, ResNet-34, ResNet-50, ResNet-101, ResNet-152, Xception).
- Improving the best result with more data using the data scraping techniques and an automatic annotation algorithm using OpenCV.
- Integration of our solution in the ROS/Gazebo simulation environment of the Hydrogen Research Institute's disinfectant robot.
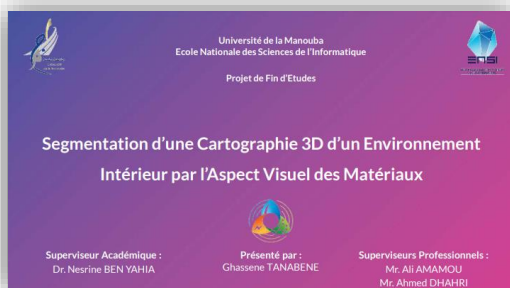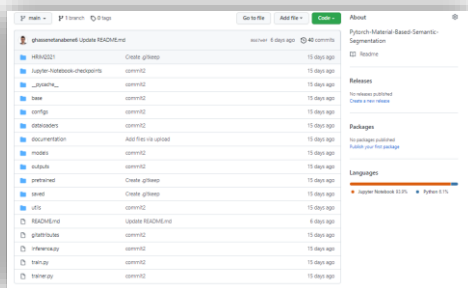
Project 2 :
Vehicle Recognition System in Tunisia

📍 **Summer internship at Chambi Eagle Technology**

📅 **Duration :** > 2 months, from July 2020 to September 2020

Main Goals :

This project aims to solve the problem of vehicle identification in Tunisia using Deep Learning models. To do that, our mission is to find a solution based on DL models and image processing to accomplish the following tasks :

- Detecting the presence of the vehicle's license plate.
- Image segmentation and extraction of the text written on the license plate.
- Text classification with deep learning.
- Development of a desktop application (UI) using .Net

📍 **Keywords :**

Python, Computer Vision, Deep Learning, Image segmentaton, Yolo, Faster-RCNN, Tensorflow, Keras, OpenCV, c# (.Net)
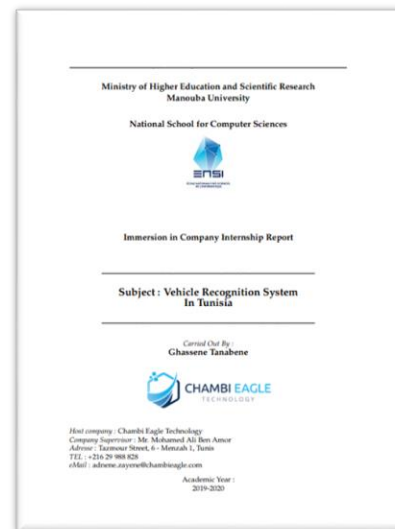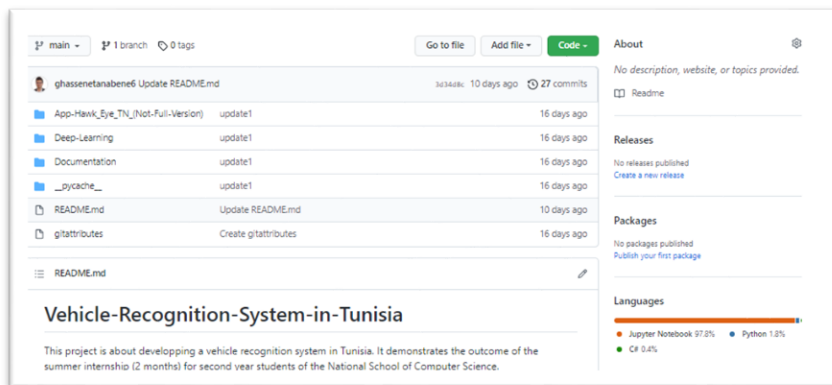
🔗 **Github** :

https://github.com/ghassenetanabene6/Vehicle-Recognition-System-in-Tunisia

📖 **Project report** :

https://drive.google.com/file/d/1eu5EJU74HGsw568w4aWfh3WxRSMfUvvq/view?usp=sharing

Project 3 :
Recommendation System For Scholarships and Universities

📍 **Summer internship at EDUTEST**

📅 **Duration :** 6 months, from January 2020 to June 2020

Subject :

In this project, we build a recommendation system for universities and scholarships. Based on unsupervised machine learning algorithms and web scraping, we perform a web application that allows students to get the most interesting internships and universities in the world according to their preferences.

Main tasks :

- Data Scraping : Scraping scholarship opportunities in Europe and USA and universities' programs from online websites.
- Data preprocessing, Data cleaning, Data visualization.
- Clustering using unsupervised Machine Learning models (K-means, DBSCAN,...).
- Development of a web application allowing students to get a scholarship recommendation according to their preferences and tests.
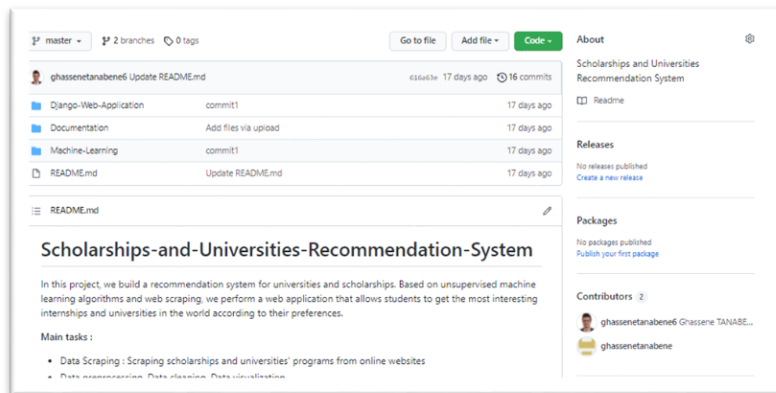
📍 **Keywords :**

Machine Learning, Web Scraping, BeautifulSoup, Data mining, NLP, Python, Numpy, Pandas, Scikit-learn, Django, Bootstrap

🔗 **Github** :

https://github.com/ghassenetanabene6/Scholarships-and-Universities-Recommendation-System

📖 **Paper (Project report in french language)** :

https://drive.google.com/file/d/14_Y4zPSxZvAA_K-_EdaUJIMrDvXIgnmN/view?usp=sharing

Project 4 :
Smart Chatbot For Company Clients

📍 **Summer internship at Colima Plus**

📅 **Duration :** >2 months, from June 2019 to August 2019

Subject :

In this project, we designed and developed a web application containing a smart chatbot for the company "Colima PLUS", which specializes in manufacturing and selling household linens online.

ColimaBot is a Smart chatbot based on Natural Language Processing that facilitates the interaction between the company "Colima PLUS" and its customers.

📍 Keywords :

Natural Language Processing, Python, NLTK, Spacy, Bootstrap, Flask

🔗 Github :

https://github.com/ghassenetanabene6/Smart-Chatbot-For-Company-Clients

For More Details

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Github : You can get an idea about other work on my github ➔ https://github.com/ghassenetanabene6

Resume : https://drive.google.com/file/d/1E1Qd8TZAoYMt37NhgDhrof1g9HaSLF1m/view?usp=sharing

Recommendation letter from the Hydrogen Research Institute :

https://drive.google.com/file/d/1YbsvkLrp3L8Cs9BTrPFYcnNVB4haHXhB/view?usp=sharing

Thank you