Portfolio Overview

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Main academic research projects

- Master's thesis : "**Monitoring deforestation from satellite imagery**" (Computer Vision and Time Series)

- Master's research project (year 1) untitled "**Decoding Speech from Invasive Brain Activity**", in partnership with the Department of Neurosurgery (Ass. Prof. C. Herff) and Data Science (Dr K. Driessens) of Maastricht University

Deep Learning, Knowledge Graphs, NLP academic projects

- Pruning methods using L0 (relaxation using Hard Concrete distribution) and L1 regularizations - application on CIFAR 10

- Implementation of a LSTM neural network which aims at predicting laser signal in a recursive fashion - hyperparameters tuning (batch normalization, learning rates, optimizers etc.) with a report containing the explanation of the architecture (Keras in Tensorflow 2.0)

- Information retrieval and text mining project to connect the community of investigator researching on covid-19 - tool used : NLP libraries, Neo4J and Stanford Core NLP

- "**Financial trends prediction from tweet sentiment-analysis of knowledge graphs built from tweets and financial indicators on the S&P 500**" (graded 9/10) - technologies used : LSTM neural network, RDF mapping files, SPARQL queries, statistical and financial analysis

Academic ML Projects

- Portuguese wine quality prediction using PCA and multilinear regression using Python

- Implementation of LDA, Logistic regression and its regularization (Lasso and Ridge) using scikit-learn and numpy

- Implementation of classifiers evaluation using numpy

- Implementation jof a multi-features randomized logistic regression from scratch including automatic visualization of hyperparameters tuning (learning rate, Lasso and Ridge Regression)
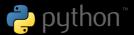
Hackathon

- 5th team at the Quantitive Management Initiative Hackathon 2021

Academic programming projects

Java

- An app for the management of travel orders of Paris-Dauphine University's professors/researchers using a geolocation API (Agile Methodology, Travis CI, Maven)
- A time-sharing processor allocation simulator

- The study of the N-body problem in celestial mechanics
- The study of the double pendulum and its stochastic motion in dynamical systems
- A soccer team composition after designing and featuring MCDM algorithms

- A simulator of assembler language
- An airport manager