NATHAN HOCHE

DEEP LEARNING DEVELOPER

CONTACT

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Toulouse, France

LINK

Github : github.com/nathan-hoche

Linkedin : linkedin.com/in/nathan-hoche/

Kaggle : kaggle.com/yukiche

LANGUAGE

French : Native

English : B2/C1

DIPLOMA

Master of Science (Computer Science)

2019-2024 - Epitech

Master of Science (Artificial Intelligence) with Distinction

2023 - University of Kent

INFORMATION

My various projects (personal and school) are described on my website and hosted on GitHub.

PROFILE

My goal in the coming years is to invest in innovative AI technologies. So I'm looking for a job that will allow me to deploy my skills in Deep Learning and/or Datamining and live out my passion to the full. Available from November 2024, I'm open to any offers in Europe or elsewhere.

EDUCATION

Epitech - Toulouse (France) 2019-2024

Master of science (Computer Science)

Learn about computing in general, as well as the associated technologies, through various individual or group projects.

Hard skills acquired:

- **Language**: C, C++, Python, Java, JS/TS, Haskell, ASM, HTML/CSS
- **Technology**:
  - **Artificial Intelligence**: Search algorithms, clustering, decision tree, neural network, ...
  - **FrontEnd**: ReactJS, Bootstrap,
  - **BackEnd**: Flask, ExpressJS, NestJs
  - **Mobile**: React Native
  - **DevOps**: Docker, Jenkins
  - **Software**: ElectronJS, Tkinter, Pygame, CSFML
  - **Data**: MongoDB, RethinkDB

Sofr skills acquired:

- Project Management (Github, Gitlab, Méthode Agile)
- Task Tracking (Jira, Trello, ...)

University of Kent - Canterbury (England) 2022-2023

Master of Science (Artficial Intelligence)

In-depth learning of artificial intelligence (Machine Learning, Deep Learning, Data Science, Natural Processing, etc.).

Skills acquired:

- **Theoretical learning** (Scientific research, scientific publications, etc.)

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FINAL PROJECT (EPITECH)

Group: 11 students
Duration: 3 years
Objective: Create a solution for a real world problem
Our project: Implementation of a system for detecting Datura (a toxic plant) in fields. As well as setting up the software to use it (website, mobile application, server backend, etc.).

My achievements:
Implementation and training of the yoloV5-based plant detection AI, support for the backend and various websites.

- **Technology:**
  - **Data management:** pandas, numpy
  - **Data visualization:** matplotlib, plotly, seaborn
  - **Algorithms:** scikit-learn
  - **Deep Learning**: Keras, TensorFlow, Google Collab

FINAL DISSERTATION (KENT)

Duration: 6 months
Theme: Composer classification
Title: Instruments a key parameter for composer classification models.

My achievements:
Implementation of models in Keras using Midi files as input, and as output a decision tree to identify the most suitable instruments for classifying composers.

WORK EXPERIENCE

Expleo - Toulouse (France) 03/2024 - 09/2024
Artificial Intelligence Internship

Implementation of Artificial Intelligence models for a quadruped robot, specifically:

- Establishment of the state of the art for various tasks, followed by the implementation of the corresponding models.
- Integration of the different models, enabling seamless interaction and collaboration between them.
- Benchmarking and optimization of these models to ensure optimal performance and handle real-time inference efficiently.

I was in charge of the robot Vision, Perception and Interpretation systems, which included the implementation of models for: **Voice Activity Detection, Speech To Text, Command Identification** (based on NLP), **Text Generation (LLM), Text To Speech, Image Captionning, Object Detection, Object Segmentation, Object Tracking and Depth Estimation**. These models were integrated and implemented to support a wide range of robot capabilities and functionalities.

PAARLY - Toulouse (France) 02/2022 - 07/2022
Data Science Internship

- Implementation of a JS scraper / crawler to retrieve product information from over 50 websites.
- Implemented selenium on servers to manage complex websites.
- Management and documentation of scrapers in puppeteer.
- Training and support for new trainees.

PAARLY - Toulouse (France) 08/2020 - 12/2020
Data Science Internship

Implementation of a JS scraper / crawler to retrieve product information from over 30 websites.

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VOLUNTEERING

Hubs EPITECH - Toulouse (France) 2020 - 2024

Organisation of more than 10 talks and 20 workshops for undergraduates (mainly on Artificial Intelligence and Web Scraping)

E-mma - Toulouse (France) 2019 - 2020

Organisation of talks and workshops for children and teenagers to promote diversity in IT.

PROJECTS

Below is my three most interesting personal projects.

MonaLisa 2023

Implementation of a program to recreate images with polygons using genetic algorithms.

Car Racing 2023

Implementation of several reinforcement learning algorithms combined with neural networks in a car race.

Music Generation (GAN) 2024

Research and development of a model to generate piano scores using GANs.