

# NATHAN HOCHÉ

## DEEP LEARNING DEVELOPER

### CONTACT

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### LINK

**Github :**  
[github.com/nathan-hoche](https://github.com/nathan-hoche)  
**Linkedin :**  
[linkedin.com/in/nathan-hoche/](https://linkedin.com/in/nathan-hoche/)  
**Kaggle :**  
[kaggle.com/yukiche](https://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 October 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

Soft skills acquired:

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

#### University of Kent - Canterbury (England) 2022-2023

Master of Science (Artificial 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
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### 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 Captioning, 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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### 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.

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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.

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### 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.

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