

# Matthieu Vilain

10 impasse des mûriers  
37390 La Membrolle sur Choisille, FRANCE  
+33 651 117 033  
mattvilain@gmail.com  
Mattvil.github.io  
French nationality



## EDUCATION

2020 – NOW

**PhD student / Bordeaux University/IMS laboratory, France**

Self-supervised learning for image sequence, applied for self-driving cars and tele detection

2015 – 2020

**Master in Data Science and Machine Learning / Cergy-Pontoise University/ENSEA, France**

Socio-cultural additional courses – Treasurer of the robotics club – Staff of the Hackerspace of the University

SPRING 2019

**Exchange - Computer Science / San Francisco State University, United-States**

Fields of study: Search Engines, Artificial Intelligence, Data Mining, Software Engineering, Neuro-Science

## SKILLS

- Programming languages: Python, Java, C/C++, Dart, SQL, Web
- ML Libraries: Tensorflow, Keras, Scikit-Learn, Pandas, Tableau
- Framework and Tools: Git, OpenCV, Docker, Kafka, Oracle
- Languages: French, English (Fluent) – German (Beginner)

## EXPERIENCE

JUNE - DECEMBER 2020

**Artificial Intelligence Research and Development Intern / Thalès, Palaiseau, France**

Research on action recognition on embedded device: Pytorch – Python – Nvidia Jetson Nano/TX2 - Opencv

JULY - AUGUST 2019

**Artificial Intelligence Developer / GAMEMAISTER, Paris, France**

Research on domain adaptation and autonomous data augmentation: Tensorflow – object-detection - multi-GPUs - Python

MAY - SEPTEMBER 2018

**Artificial Intelligence Research and Development Intern / XXII GROUP, Suresnes, France**

Automation of machine learning pipeline with neural architecture search: Research – AutoML – Tensorflow – Python – LSTM & CNN

JULY - AUGUST 2017

**Freelance / Creation of start-up in computer vision, Paris, France**

Recognition of board games: Python – Image processing – Clustering algorithm – CNN with Theano – data management

JUNE 2017

**Research Intern / ETIS Laboratory, Cergy-Pontoise, France**

Machine learning for robotics: Neural network – C language - CNN with Tensorflow – Reinforcement learning - robotic arm control

JUNE - JULY 2016

**Research Intern / ETIS Laboratory, Cergy-Pontoise, France**

Research subject: Algorithm resolving the maximal sub-matrix problem: C implementation – image processing application

## PROJECTS

### Main school projects

- **Research:** Spiking neural network on event-based camera data for fall detection
- **PerceptU:** Gesture controllable TV interface that recognize user emotion using audio and facial analysis.
- **Research:** Use auto-encoders to learn object movements in an unsupervised way
- **FaceKey:** Password manager based on facial recognition
- **UrbanLifeSimulator:** simulation of citizen behavior in a city using reinforcement learning

### Main personal projects

- Stock market prediction using social media data
- Hackathon: 2<sup>nd</sup> place Enseack 2020 (Paris), 2<sup>nd</sup> place RushHourMobility 2019 (Paris), SFHacks 2019 (San Francisco)
- Conception of a robot for the French Robotics Cup
- AI algorithm implementation from scratch: Q-Learning, neural network, K-means, Kohonen map, A\*, Naïve Bayes...