

Johan Gras

 [johan-gras.github.io](https://github.com/johan-gras) |  [in johan-gras](https://www.linkedin.com/in/johan-gras) |  [johan-gras](https://twitter.com/johan-gras)
 johan.gras@outlook.com |  +44 7862 337 466

EDUCATION

ENSEA ENGINEERING SCHOOL

MSC IN ARTIFICIAL INTELLIGENCE

2019 | Cergy, France

Major GPA: 4.0/4.0

PARIS-SACLAY UNIVERSITY

BS IN COMPUTER SCIENCE

2017 | Orsay, France

COURSEWORK

ARTIFICIAL INTELLIGENCE

Machine Learning
Neural Networks
Graph and Tree Search
Computer Vision
Reinforcement Learning
Genetic Algorithms
Optimization Methods
Probability and Statistics
Signal Processing

COMPUTER SCIENCE

Advanced Algorithmic
Advanced Databases
Oriented-Object Programming
Embedded Computing
Systems and Networking
Web Development
Compilation and Formal Language

SKILLS

Machine Learning:

Computer Vision
Reinforcement Learning
Model Inference Optimization
TensorFlow • PyTorch • Numpy
Scikit-learn • Jupyter Notebook

Programming:

Python  • C/C++ • Java • SQL
Unit testing • Microservice

DevOPS/MLOPS

Git • Docker • AWS • GCloud
Jenkins • Unix • Bash

Miscellaneous:

Web (HTML, Django, PHP,...)
L^AT_EX • Web Scrapping

EXPERIENCE

ARM | MACHINE LEARNING ENGINEER, INFERENCE OPTIMIZATION

Nov 2020 - Present | Cambridge, United Kingdom

Working in the ML group as an open source contributor to Google's TensorFlow.

- Implementing model optimization techniques, enabling engineers to improve inference performance with negligible impact on accuracy. Using **TensorFlow**, **TF Model Optimization**, **Quantization**, **Weight Pruning/Clustering**.
- Collaboration with the research team to improve inference of few-shot classification models, using **Python**, **PyTorch**.

THALES | RESEARCH ENGINEER INTERN, REINFORCEMENT LEARNING

Apr 2019 - Oct 2019 (6 month) | Montreal, QC, Canada

Optimization of resources allocation on flying assets through Deep RL.

- Shaped policies capable of adaptation to a variety of scenarios in a multi-agent setting, using **DQN** and **Policy Gradient**.
- Built a RL framework that seamlessly integrates into an industry grade simulator, using **Python**, **TensorFlow**.

THALES | SOFTWARE ENGINEER INTERN

Jul 2018 - Sep 2018 (3 month) | Elancourt, France

Creation of an application to design, manage and simulate realistic traffic scenarios.

- Reduced by an order of magnitude the average time to create a simulation through the automatisaton of: map importation, traffic and events generation,...
- Redesigned the old process of scenario creation by building a clean user interface with an interactive map, using **Python**, **Java**, **Flask**, **Swing** and **SUMO**.

PROJECTS

MY PORTFOLIO | [JOHAN-GRAS.GITHUB.IO](https://github.com/johan-gras)

PUZZLE REASSEMBLY | MASTER RESEARCH PROJECT

- Tackled the jigsaw puzzle reassembly problem in a context where boundary information is missing (eroded pieces). Formulated the problem as a MDP.
- Adapted the AlphaZero algorithm to a new category of problem : one player, tuple of actions, set of features as a state. Used **Python**, **TensorFlow**, **Model-Based Reinforcement Learning**.

AI ALGORITHMS | IMPLEMENTATION OF PAPERS

- **Implemented** AlphaZero, MuZero (150+★ on GitHub), DQN, U-Net, Expectation-Maximisation, Alpha-Beta and other AI algorithms.

BIG COOKING DATA | FULL STACK DATA SCIENCE

- Scraped over 100 000 cooking recipes from the web using **Scrappy**.
- Pre-processed highly inconsistent data using **NLTK**, **Scikit-learn**.
- Developed a **recommender system** of recipes based on user preferences.
- Built a computer vision app that automatically register shopped food items, using **Python**, **Fast.AI**, **Flask**.

INDOOR TRACKING | COMPUTER VISION PROJECT

- Built a computer vision project featuring a multi-criteria tracking system, in **C**.
- Implemented a couple of low level CV algorithms: **Image segmentation**, **Interest Point Detection**, **Mathematical morphology**.