

Villerabel Mathias

Machine Learning Scientist



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Fluent in French & English



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About me

I am deeply passionate toward using science to solve complex challenges while developing elegant solutions and algorithms.

I enjoy to exchange and collaborate with a team. That bring me many insight and new thinking.

I also love the fact that we are just touching the boundaries of the Machine Learning domain and that they are still many things to do !

Skills

Machine Learning



Earth observations



Multi-Agents-System



Robotics



SAR satellite imagery



Operational research



(*)[The skill scale is from 0 (Fundamental Awareness) to 6 (Expert).]

Education

- 2016-2019 M.Sc. Computer Science Sorbonne University France
Machine learning, agents, robotics, operational research, decision
- 2013-2016 B.Sc. Computer Science & Mathematics Sorbonne University France
Algorithmic, Statistics, Software Engineering, Network, Linux

Experience

- dec 2020-present Applied Scientist Synspecive Japan
- Using Insar coherence images and intensity images from SAR to predict construction status with multiple images input model and VGG16.
- Building a datahub for earth observation datasets. Providing data for monitoring sustainable development goals.
- mar-aug 2019 Machine Learning Intern National Institute of informatics Japan
- Using main component like mobilenetV2, segmentation & regression map, LSTM to detect human actions.
- Integrated deep learning model in drone embedded system for real life application like search and rescue or Surveillance.
- feb-sep 2018 Data Scientist Intern Webedia Shopping Services France
- Targeting of customer using clustering and Evolutionary algorithms.
- Prediction of customer behavior using majority vote classifiers.
- Attribution of products to customer using max bipartite matching.

Projects

- 2018 Training an agent to play Starcraft 2
Reinforcement Learning, Computer Vision.
- 2018 Induce swarming behaviour in agents
Robotics, Evolutionary algorithm, Neural network.
- 2017 Modelling the user behaviour in a menu
HCI, Q-Learning, Markovian decision process.
- 2017 Multi-agents system inspired by the game : Hunt the Wumpus
Communication, information exchange, deadlock, cooperative strategies.

Publications

- 2019 UAV-based Situational Awareness System using Deep Learning
Published at IEEE Access
- 2019 Real-time Aerial Surveillance
In writing process

Programming languages and Software

Languages

Java, Python (*proficient*). C++, Shell (*fluent*). Matlab, Prolog, Ocaml (*experience*).

Software library

Numpy, Pandas, GeoPandas, rasterio, Sklearn, Tensorflow/Keras, Pytorch GPU.

Software & others

Eclipse, Emacs, Rational Software Architect, GitHub, LaTeX, TCP/IP, MySQL, CSP.

Miscellaneous

- Seasonal employment: train attendant at IDTGV, luxury seller at Burberry in Printemps Haussmann.
- Administration and management of dedicated servers.
- Member at the Fab Lab of Pierre-and-Marie-Curie University.
- Hobbies: reading, board games, science and technology news

