

MATTHIEU DE CASTELBAJAC

matthieu.de_castelbajac@etu.sorbonne-universite.fr

gitlab.com/MdeCastelbajac

matthieu-decastelbajac.com

EDUCATION

MSc | *Computer Science – Computer Vision*

Sep. 2021 – Sep. 2023

Sorbonne Université (UPMC)

Paris, France

- **Image Processing & Computer Vision** : various models and methods on images, volumetric and kinematic analysis
- **Machine Learning and Deep Learning** : emphasis on computer vision applications
- Medical Imaging : models and protocols, emphasis on neuroimaging
- Computer Graphics fundamentals
- Multi Agent System fundamentals
- Linear Algebra & Statistics for Computer Science

BSc | *Major: Computer Science, Minor: Biology*

Sep. 2018 – May 2021

Sorbonne Université (UPMC)

Paris, France

WORK EXPERIENCE

Research Intern Masters Thesis

Spring / Summer 2023 (6 months)

MARBEC, LIRMM

Montpellier, France

- Conceiving a method to predict poverty indicators from satellite imagery of rural coastal areas.

Junior Analyst

Summer 2022 (3 months)

Kayros, LSCE (in collaboration with Tsinghua University)

Paris, France

- Co-conceived a model to estimate and spatially distribute CO₂ indirect emissions in urban residential areas for COP-27.
- Built a **Machine Learning model to spatially disaggregate population** in poorly described urban areas, from various census, vectorized and rasterized data (OpenStreetMap, Google Earth Engine, other data providers).

PROJECTS

Glioblastoma (Brain Tumor Cells) Images Analysis in Digital Histopathology

Fall 2022

More on website

- State of the art on segmentation applied to Whole Slide Images
- Implementation of parametric methods to **segment micro blood vessels and cell nuclei on IHC-stained Whole Slide Images**

Downscaling Sea Surface Height using Cross-Input Neural Network for Super-Resolution Spring 2022

More on website

- State of the art on **Deep Learning for image Super-Resolution**
- Implementation and adaptation of a **Cross-Input Super-Resolution Network** | *Python – Keras*
- Test and comparison to existing models on ocean simulated images

SKILLS

Communication: French (Native), English (C1), German (A2)

Preferred Languages: Python, C, C++

Libraries: Pytorch, Tensorflow, Keras, Scikit-learn/image, (Geo)Pandas, Numpy, Matplotlib, GEE api

PERSONAL INTERESTS

- Traditional and Digital Painting | *Some artworks*
- Sustainability : Agroecology and Permaculture, Low-Techs, etc.