

# OCÉANE CASSAN

Currently searching for a Post-doctoral position

## EDUCATION

- 2019  
|  
2018 • **University Claude Bernard (UCBL)**  
MSc in Computer Science specialized in Artificial Intelligence  
Lyon, France
- 2019  
|  
2014 • **National Institute of Applied Sciences (INSA)**  
Engineering degree in Bioinformatics and Modelling  
Lyon, France

## RESEARCH EXPERIENCE

- 2022  
|  
2019 • **PhD - BPMP, SIRENE team**  
Predictive biology and systems biology to learn the regulatory pathways in plants under climate change  
Montpellier, France
  - Statistical inference of the gene regulatory network in *Arabidopsis thaliana* under elevated CO<sub>2</sub> and nutritional limitations from transcriptomic data
  - Genome Wide Association study to identify genetic determinants of mineral status response under elevated CO<sub>2</sub>
  - Development of an **interactive suite** for transcriptomic analyses and the inference of regulatory networks
  - References : Antoine Martin and Sophie Lèbre
- 2019 • **6 months research internship - LIRMM, MAB team**  
Supervised learning to predict chromosomic interactions in the human genome, based on CAGE data and 3C techniques  
Montpellier, France
  - Reference : Laurent Bréhélin
- 2017 • **1 month research internship - LIRMM, MAB team**  
Sparse logistic regression to model transcription factor combinatorics for gene regulation in human  
Montpellier, France
  - Reference : Laurent Bréhélin

## PROFESSIONAL EXPERIENCE

- 2018 • **Internship in quantitative biology - Nanolive SA**  
Development of software tools for the 3D detection and tracking of biological objects in label free images  
Lausanne, Switzerland
  - Reference : Mathieu Frechin



## CONTACT

✉ [oceane.cassan@cnrs.fr](mailto:oceane.cassan@cnrs.fr)  
🌐 [github.com/OceaneCsn](https://github.com/OceaneCsn)  
☎ +33 6 79 42 48 89

## SKILLS

**Transdisciplinarity** : ability to understand and articulate biology, statistics and computer science to generate knowledge

**Statistics** : statistical learning models, regression, sparse regression, mixed models, machine learning, tree-based methods.




**Biology** : plant biology, next generation sequencing data analysis

**Computer science** : R, ggplot2, tidyverse, R package development, Rmarkdown, Shiny, Python, LaTeX, Bash

*Last updated on 2022-01-10.*



## TEACHING EXPERIENCE

- 2022  
|  
2021
  - **Instructor of R for L3 plant biology students**  
**Teaching material**  University of Montpellier, France
    - Good practices and scientific integrity around data analysis
    - Data manipulation and visualisation in R
- 2022  
|  
2020
  - **Instructor of Rmarkdown for M1 data science students**  
**Teaching material**  University Paul Valéry of Montpellier, France
- 2022
  - **Regulatory network inference for M1 plant biology students**  
Statistical methods, and practical session  
 University of Montpellier, France



## SELECTED PUBLICATIONS

- 2021
  - **Inferring and Analyzing Gene Regulatory Networks from Multi-Factorial Expression Data: A Complete and Interactive Suite**  
Cassan, Océane, Sophie Lèbre, and Antoine Martin. 2021 BMC Genomics 22 (1). <https://doi.org/10.1186/s12864-021-07659-2>
- 2019
  - **Probing Transcription Factor Combinatorics in Different Promoter Classes and in Enhancers**  
Vandel, Jimmy, Océane Cassan, Sophie Lèbre, Charles-Henri Lecellier, and Laurent Bréhélin. 2019 BMC Genomics 20 (1): 1–19. <https://doi.org/10.1186/s12864-018-5408-0f>