

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
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2014 • **National Institute of Applied Sciences (INSA)**
Engineering degree in Bioinformatics and Modelling
Lyon, France

RESEARCH EXPERIENCE

- 2022
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2019 • **PhD - Institute for Plant Sciences in Montpellier, SIRENE team**
Predictive 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 CO₂ and nutritional limitations from transcriptomic data
 - Genome Wide Association study to identify genetic determinants of mineral status response under elevated CO₂
 - 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

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🌐 github.com/OceaneCsn
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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 2022-02-21.



TEACHING EXPERIENCE

- 2022
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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
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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>

CONFERENCES AND WORKSHOPS

- 2022
 - **Molecular responses of plants facing climate change**
 Organizer and presenter 📍 Montpellier, France
 - Poster presenting Genome Wide Association studies, linking genetic determinants to mineral status response under elevated CO2 in Arabidopsis populations
- 2021
 - **JOBIM**
 Presenter 📍 Virtual
 - Poster presenting the Dashboard for the Inference and Analysis of Networks from Expression data
- 2021
 - **International Plant Systems Biology**
 Presenter 📍 Virtual
 - Poster presenting Gene Regulatory Network inference of Arabidopsis under eCO2 and nutritional limitations
- 2020
 - **Netbio**
 Speaker 📍 Virtual
 - Talk presenting the Dashboard for the Inference and Analysis of Networks from Expression data