Vadim BERTRAND

https://github.com/vadmbertr/

+33 6 14 62 32 18
vadim.bertrand@gmail.com
Grenoble area
France

1st year PhD student in Oceanography – Master's Degree in Statistics – Software Engineer

EDUCATION

2024-   **PhD** | Institut des Géosciences de l'Environnement – Team **MEOM**
Stochastic Modelling of Drifting Object Trajectories at the Ocean Surface using Machine Learning
Supervised by Julien Le Sommer (CNRS Researcher), Emmanuel Cosme (UGA Full Professor) and Adeline Leclercq Samson (UGA Full Professor)
→ Implementing the `Python` package `sealagrangiax`

2023   **Master's Degree in Statistics** | Université Grenoble Alpes – IM²AG
Ranked 1st, Graduated with High Honors
Bayesian statistics, Computational statistics, Spatial statistics, Operations research and optimization, Non-parametric and functional estimation, Supervised and unsupervised learning

2014   **Engineering Degree** | Grenoble INP – Phelma / Ensimag
Signal processing, Algorithms and programming, Graph theory, Information theory

ACADEMIC AND PROFESSIONAL EXPERIENCE

2023   **Research Engineer** | Institut des Géosciences de l'Environnement – Team **MEOM**
Variational cyclogeostrophic inversion for estimating ocean surface currents
Supervised by Emmanuel Cosme (UGA Full Professor) and Julien Le Sommer (CNRS Researcher)
→ Implemented the `Python` package `jaxparrow`, leveraging `JAX`

2023   **Research Internship** | TIMC –Team **M**odels and **A**lgorithms for **Ge**nomics
Exploration of joint deconvolution algorithms for omic data (report, poster)
Supervised by Magali Richard (CNRS Researcher)

2022-2023   **Mentored Master's Project** | Université Grenoble Alpes – IM²AG
Effect of anthropogenic noise on narwhals behavior (as part of this larger study)
Supervised by Adeline Leclercq Samson (UGA Full Professor)

2022   **Research Internship** | Laboratoire Jean Kuntzmann – Team **D**onnées, **A**pprentissage et **O**ptimisation
Deep generative learning for next-generation drugs (report)
Supervised by Sergei Grudinin (CNRS Researcher)

2016-2021   **Software Engineer** | Inria / GIPSA-lab – Team **D**ynamics **an**d **C**ontrol of **N**etworks
Supervised by Carlos Canudas-de-Wit (CNRS Researcher)
→ Developed the web-application GTL-VILLE, collecting, estimating and predicting road traffic indicators in real time in the Grenoble Metropolis (subsequent publication)

TEACHING

2024   **Statistics (Practical Session)** | Université Grenoble Alpes - Bachelor in Biochemistry

INTERNSHIP SUPERVISION

2024   **Léo Boux de Casson (Bachelor, École Normale Supérieure de Lyon)**, with Julien Le Sommer
Eulerian comparison of lagrangian drifter velocities and reconstructed sea surface currents within the SWOT swath in the Mediterranean sea

Scientific Contributions

2024	**Python Package**	`sealagrangiax` *A stochastic Lagrangian trajectories sampler for ocean surface drifters*
2024	**Oral Presentation**	*Cyclogeostrophic inversion for estimating Sea Surface Currents from SWOT altimeter data*, 30YPRA-OSTST, Montpellier, France
2024	**Poster Presentation**	*Cyclogeostrophic inversion for estimating Sea Surface Currents*, EGU, Vienna, Austria. 10.5194/egusphere-egu24-17489
2023	**Python Package**	`jaxparrow` *A package for computing the inversion of the cyclogeostrophic balance based on a variational formulation approach*
2023	**Poster Presentation**	*Scoring and ranking strategies to benchmark cell type deconvolution pipelines*, JOBIM and ISMB, Nice and Lyon, France. PDF
2018	**Journal Article**	G. Casadei, V. Bertrand, B. Gouin, C. Canudas-de-Wit, *Aggregation and travel time calculation over large scale traffic networks: An empiric study on the Grenoble City*. Transportation Research Part C: Emerging Technologies, 2018. 10.1016/j.trc.2018.07.033

Miscellaneous

Living languages

English: fluent, Spanish: notions

Programming languages

Python (JAX, PyTorch, NumPy, Xarray, etc...), Julia, R ; Git ; Shell scripting

Hobbies

Rugby (2 years in sports study) and now Touch rugby (what's that???), Running, Ski touring, Diving (not enough...)