

Vadim BERTRAND

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Grenoble area
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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, Emmanuel Cosme and Adeline Leclercq Samson
→ Implementing the Python package [sealagrangiax](#), relying on [diffrax](#) (and more)
- 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 and Julien Le Sommer
→ Implemented the Python package [jaxparrow](#), leveraging JAX
- 2023 **Research Internship** | TIMC – Team Models and Algorithms for Genomics
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 ([related study](#))
Supervised by Adeline Leclercq Samson, UGA Full Professor
- 2022 **Research Internship** | Laboratoire Jean Kuntzmann – Team Données, Apprentissage et Optimisation
Deep generative learning for next-generation drugs ([report](#))
Supervised by Sergei Grudin, CNRS Researcher
- 2016-2021 **Software Engineer** | Inria / GIPSA-Lab – Team Dynamics and Control of Networks
Supervised by Carlos Canudas-de-Wit, CNRS Researcher
→ Developed the web-application [gtlville](#), collecting, estimating and predicting road traffic indicators in real time in the Grenoble Metropolis

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](https://doi.org/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](https://doi.org/10.1016/j.trc.2018.07.033)