

Vadim BERTRAND

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Grenoble area
FRANCE



Statistics and Data Sciences 2nd year Master Student – Software Engineer

EDUCATION

- **2022 – 2023 (expected)** **Université Grenoble Alpes – IM²AG**
2nd year Master's in Statistics and Data Sciences – Labelled “Core IA” by MIAI
 - Non-parametric and functional estimation (cumulative, survival, density)
 - Computational and High Dimensionality Statistics (Monte Carlo, bootstrap, permutation)
 - Supervised learning: random forest, Support-Vector Machine, Neural Networks
 - Mathematical optimization
 - Text mining: MLP, LSTM, Transformers, BERT...
- **2021 – 2022** **Université Grenoble Alpes – IM²AG**
1st year Master's in Statistics and Data Sciences – Labelled “Core IA” by MIAI
 - Probability, inferential statistics and statistical tests
 - Data analysis (PCA, FCA, FCMA)
 - Linear and Generalized Linear Models
 - Unsupervised (hclust, k-means, ...) and supervised (k-nn, LDA/QDA, lasso/ridge/Elastic-Net, stability selection, ...) learning
 - Time series analysis
- **2014 – 2015** **Université Grenoble Alpes – IAE**
Master's in Management, specialty Business Administration
- **2011 – 2014** **Grenoble INP – Phelma / Ensimag**
Engineering degree “Internet, Services and Connected Systems”
 - Database Management System
 - Distributed systems and applications
 - Algorithmic

PROFESSIONAL EXPERIENCE

- **May. 2022 – Aug. 2022** **Research Internship – DAO team of LJK – Grenoble**
“Deep generative learning for next-generation drugs” – 1st year Master's internship – [report](#)
 - Extended a 2D image inpainting CNN to 3D and drugs generation tasks
 - Used an invariant ligand-protein complex representation based on oriented residue density grids
 - Implemented using PyTorch library
- **Sept. 2016 – Aug. 2021** **Engineer – DANCE team (CNRS / Inria) – Grenoble**
 - Developed, deployed and maintained applications for collecting, estimating and predicting road traffic indicators in real time in the Grenoble Metropolis via the use of models designed by members of the team
 - * <http://gtl.inrialpes.fr> (stable)
Pre-processing – filtering and imputation – estimates and predictions using MATLAB
 - * <http://gtlville.inrialpes.fr> (experimental)
 - Developed mostly using the Python ecosystem
 - Collects data from multiple heterogeneous sources
 - Relies on NetworkX, pandas and xarray for datasets manipulations
 - Handles spatial data through Shapely, PyGEOS and OpenLR
 - Backed by a PostgreSQL relational database and PostGIS extension
 - Collaborated with PhD / post-doctoral students and supervised interns
 - * Evaluated the impact of reducing the maximum speed limit to 70kmph on pollutant emissions on Grenoble's south ring during pollution peaks
 - * Built a dynamic partition model – based on nodes' state – of a road network to estimate travel times through the obtained partitions – [paper](#)
 - Wrote technical documentation for the opening of a public tender to collect traffic data

1994

First snowplows

1996

Judo white belt

1998

Initiation to rugby

2007

Sport-study rugby program

2012

3 months in Australia

2014

Switch to ski touring

2015

2 months around the Balkans

2017

Transition to Touch rugby

2019

Rediscovered chess

2020

1st diving level

2021

Integrated the M30
Touch rugby
French selection

Languages

English Fluent
Spanish Notions

Miscellaneous

Python, R, C++
L^AT_EX
Git
Docker
Shell scripting