# David Munoz-Tord



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## Skills

**R** — 6 yrs.

**Python** — 3 yrs.

**JavaScript** — 2 yrs.

**Bash** — 5 yr.

**SQL** — 2 yrs.

**Matlab** — 4 yr.

**Data Analysis** — 6 years

**Data Engineering** — 2 yrs.

**Data Visualization** — 7 years

## Libraries

- echarts, ggplot2, plotly, seaborn
- R Shiny, Dash, Streamlit
- tidyverse, data.table, dplyr
- TensorFlow, Keras, PyTorch, Scikit-learn
- Rstan, brms, JAGS
- H2O, XGBoost, LightGBM
- tidymodels, caret, mlr

## Tools/Frameworks

- Git, Terminal
- Docker
- CI/CD
- AWS
- ML OPS
- ETL, NIFI

## Summary

Experienced Data Scientist with a background in neuroscience and a proven track record in data analysis, visualization, and management. Skilled in developing data systems and models to support decision-making processes. Strong communication skills and a collaborative approach to working with diverse teams. Fluent in English, proficient in Python, and R, with a keen interest in humanitarian work and data-driven solutions.

## Experience

**R Developer** — 04/2022 - 01/2024
FlowBank

- Contributed as a key member of the data migration to AWS cloud, ensuring seamless transfer, and scalability.
- Conducted in-depth analysis to classify customers using Bayesian inference, revealing distinct segments and patterns for data-driven decision-making and targeted strategies.
- Engineered and deployed a sophisticated fraud detection system, leveraging neural networks and support vector machines to accurately identify fraudulent activities.
- Developed new internal tools for data analysts in the form of R packages, and provided training and support for their use.
- Designed and implemented a datawarehouse solution for efficient data processing and orchestration, contributing to streamlined data engineering workflows.
- Led the development of a comprehensive ML-Ops infrastructure, leveraging AWS cloud infrastucture for seamless deployment and calability.
- Designed and maintained a data visualization dashboard in R Shiny, which allowed for easy monitoring of key performance indicators.

**Lecturer in Biotatistics** — 09/2020 - 01/2022
University of Geneva

- Conducted lectures on statistics for the graduate program and mentored students in their research projects, providing guidance on statistical analysis and data visualization.
- Created and shared freely available data workshops in R and Python.

**PhD Candidate in Computational Neuroscience** — 03/2020 - 01/2022
Campus Biotech

- Processed terabytes of data for a large scale of longitudinal clinical trials (EEG/fMRI signal and blood samples).
- Used various statistical methods to analyze large scale datasets: Hierarchical Bayesian modeling, Multivariate pattern analysis, and model-free reinforcement learning.
- Demonstrated commitment to medical data management protocols compliance and proficiency in grant acquisition.
- Collaborated with Caltech data engineers to implement ICA-based denoiseification for better identification of activation and artifact components in fMRI.

**Internship in Computational Neuroscience** — 03/2019 - 03/2020
Geneva Neurocenter

- Developed and implemented computational models to study neural system mechanisms and dynamics.

## Projects

See my github profile for a more comprehensive list of open source projects.

**Volunteer** — Pro Velo
R, JavaScript

## Education

### Ph.D. Candidacy in Computational Neuroscience

03/2020 - 01/2022
Campus Biotech - Switzerland
Topic: Computational modeling of addiction using neuroimaging data

### MSc in Neuroscience

09/2018 - 03/2020
University of Geneva - Switzerland
Thesis: Denoising of high resolution fMRI signal using tICA

### Complementary Studies in Computer Science

09/2017 - 06/2018
Smith College - USA
Capstone: Machine Learning for neuroimaging data

### BSc in Cognitive Science

09/2014 - 06/2017
University of Geneva - Switzerland
Thesis: Early detection of ASD event related potentials

## Languages

**French** — Native

**Spanish** — Native

**English** — Fluent

**Japanese** — Beginner

## Technical Skills

- Data Sctuctures and Algorithms
- Data Mining
- Machine Learning
- Linux System Administration
- Visualization for Scientific Data
- Spatial Analysis
- Bayesian Statitics

## Extracurricular

- Top 2% on StackOverflow (2024)
- Top 25% on GitHub (2023)
- Global Fellow scholarship (2017)
- Co-founder of Go-Fast, a socially responsible Bike Messenger cooperative in Geneva.

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– Developed an interactive Shiny dashboard with ProVelo to enhance road safety analysis in Geneva. State-of-the-art platform offers insights and comprehensive accident data visualization. Versatile tool caters to a wide range of users, from policymakers to data enthusiasts.

**Co-President** — **We Data**
R, Python, Rust, JavaScript

– We Data is an organization that shares knowledge on code in data science (Blog, YouTube channel), give workshops about statistics, and do coding demonstrations. We also organize the R-Lunches.

**Maintainer** — **echarts4r**
R, JavaScript

– Collaborated on the development of echarts4r, a R package that expands the capabilities of R-based interactive visualizations with a powerful rendering engine, while enhancing flexibility and ease of use.

**Collaborator** — **hBayesDM**
STAN, R, Python

– Collaborated on the Hierarchical Bayesian modeling of Decision-Making tasks library (hBayesDM). Built Q-learning algorithm for probabilistic selection task.

**Maintainer** — **Firebase**
R, JavaScript

– Contributed extensively to the firebase integration package for R, empowering the Shiny user community by enabling user authentication and secure file storage through Firebase Storage.

**Creator** — **DbVieweR**
R, SQL

– Created a shiny app (DbVieweR) simulating a database management system featuring functions like login authentication, save/create/delete tables, add/rename columns, using either a PostgreSQL or SQLite back-end.

**Collaborator** — **reprtree**
R

– Integrated the caret ensemble for reptree (implementation of representative trees from ensembles of tree-based machines).

**Collaborator** — **3dLMEr**
BASH, R

– Collaborated on the AFNI's functions for 3Dimensional Linear Mixed-Effects Regression (3dLMEr). Fixed residuals output image by adding bottom tolerance.

## Publications

See my publications pages for a comprehensive list my scientific publications.

## References

Pierre Saouter ✉, **Head of Data Science at FlowBank**

Ben Meuleman ✉, **Statistician at University of Geneva**

David Sander ✉, **Director of the Center for Affective Sciences**

Jose Nunes ✉, **Professor of Biostatistics at the University of Geneva**

Eva R. Pool ✉, **Senior Researcher at Campus Biotech**