David Munoz Tord

david-munoztord.com | munoztd0 | david.munoztord@mailbox.org | 0792441756

Experience

FREELANCER | Data Scientist

Part-time: October 2022 – Present | Geneva, Switzerland

- Led the development and launch of a scientific project in collaboration with EPFL, transitioning initial scripts into a comprehensive Software as a Service (SaaS) solution accessible to clients via Elastic Kubernetes Service (EKS) on AWS.
- Offered technical consulting services to a startup specializing in cognitive and educational technologies, translating academic research in cognitive neuroscience and developmental psychology into actionable solutions, while also advising on machine learning implementations.
- Collaborated closely with analysts across departments to design, build, and deploy various initiatives within the data platform, including the development, deployment, and maintenance of data services using R and PostgreSQL. Additionally, implemented best practices for continuous process automation, resulting in significant time savings for month-end processing.

FLOWBANK | Full Stack Data Scientist

Part-time: January 2023 – January 2024 | Geneva, Switzerland

- Conducted in-depth data analysis to classify customers using Bayesian inference, revealing distinct segments and patterns for data-driven decision-making and targeted strategies.
- Designed and implemented Apache NiFi ETL for efficient data processing and orchestration, contributing to streamlined data engineering workflows.
- Developed new internal tools for data analysts.
- Led the development of the data science infrastructure, creating an environment tailored for cutting-edge research and innovation.

FLOWBANK | R Developer/ Data Engineer

April 2022 – January 2023 | Geneva, Switzerland

- Developed and implemented complex statistical models in R to detect fraudulent transactions.
- Designed and maintained a data visualization dashboard in R Shiny, which allowed for easy monitoring of key performance indicators.
- Led the development of a comprehensive data science infrastructure, including Docker environments for Julia, R, and Python, and leveraging AWS SageMaker for seamless deployment and scalability.

UNIVERSITY OF GENEVA | Lecturer in Statistics

Part-time: September 2020 – January 2023 | Geneva, Switzerland

- Conducted lectures on statistics for the Master of Neurosciences program, ensuring a comprehensive understanding among students.
- Developed and delivered tailor-made course materials, catering to the specific needs and challenges of neurosciences students.
- Mentored and supervised graduate students in their statistical research projects, nurturing their analytical skills and research capabilities.
- Created and shared freely available data workshops in R and Python.

SKILLS

Programming

Proficient:

R • Python • BASH • SQL • NIFI

Experienced:

MATLAB • STAN • Julia • JavaScript

Libraries/Frameworks

TensorFlow • Scikit-Learn • Spark MLib • Torch • Shiny • BRMS • Rstan • Caret • Glmnet • d3.js

Tools/Paradigms

Git • AWS: S3, Sagemaker, Glue • MlOps • Azure DevOps • ETL

EDUCATION

Master of Neurosciences | Geneva Neurocenter

Sept 2018 - March 2020 | Switzerland

Coursework in Reinforcement learning, AI, Data science and Neuroimaging. GPA: 3.85

Complementary Studies in Data Science | Smith College

Sept 2017 - June 2018 | MA, USA

Capstone project: Leveraged SQL and R to create a comprehensive analysis of the entertainment industry's network using the IMDb database.

Bachelor of Pyshology | University of Geneva

Sept 2014 - June 2017 | Switzerland

Relevant coursework completed in statistics and scientific programming.

Coursework

Algorithms • Data Mining • Machine Learning • Artificial Intelligence • Linux System Administration • Visualization For Scientific Data • Database Management Systems • Object Oriented Programming • Spatial Analysis

CAMPUS BIOTECH | PhD Candidate in Neurosciences

August 2019 – November 2021 | Geneva, Switzerland

- 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 dataset: Hierarchical Bayesian modeling, Multivariate pattern analysis, and model-free reinforcement learning.
- Managed neuromedical data according to the Swissmedic regulatory compliance specifications.
- Collaborated with Caltech data engineers to implement tICA for better identification of activation and artifact components in fMRI.
- Developed and implemented computational models to study neural system mechanisms and dynamics.

GENEVA UNIVERSITY NEUROCENTER | Internship in Computational Neurosciences

August July 2019 – December 2019 | Geneva, Switzerland

- Integrated reinforcement learning techniques with computational psychiatry, employing model falsification and parameter recovery in a theory-driven approach to computational modeling.
- Collaborated on the Hierarchical Bayesian modeling of Decision-Making tasks library [hBayesDM]. Built the Q-learning algorithm for probabilistic selection task.

Open-Source Contributions

echarts4r | R, JavaScript - 2023 - Present

- 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.

FiRebase | R, JavaScript - 2023 - Present

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

DbVieweR | R, JavaScript and SQL - 2022 - present

- Created shiny app that simulates a database management system featuring functions like login authentication, save/create/delete tables, add/rename columns, using either a PostgreSQL or SQLite back-end [DbVieweR].

brms | R - 2022

- Made small contributions to the (brms) package, including resolving issues related to class definition.

reprtree | R - 2022

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

hBayesDM | STAN, R and Python - 2021

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

3dLMEr | BASH and R - 2020

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

LANGUAGES

Fluent

English | French | Spanish

RECOGNITIONS

2024 = Top 2% on Stack Overflow
2023 - Top 25% on GitHub.
2017 - textitGlobal Fellow scholarship.

EXTRACURRICULAR

- Contributing to We Data's mission by facilitating workshops, providing statistics tutorials, and participating in coding demonstrations.
- Organizing R-Lunches at UniGe.
- Co-founder of ***Go-Fast***, a socially responsible Bike Messenger cooperative in Geneva.
- Co-president of ***La Rustine***, a non-profit organization promoting non-motorized mobility and self-sustainability in Switzerland.

PUBLICATIONS

Investigating the effect of liraglutide on self-reported liking and neural responses to food stimuli. Paper
Coppin, G., Munoz Tord, D., Pool, Cereghetti, D., Golay, A., Sander, D., & Pataky, Z. Europe PMC (2022)

Differential contributions of ventral striatum subregions to the motivational and hedonic components of the affective processing of reward. Paper
Pool, E. R., Munoz Tord, D. , Delplanque, S., Stussi, Y., Cereghetti, D., Vuilleumier, P., & Sander, D. Journal of Neuroscience (2022)

3D-printed pacifier-shaped mouthpiece for fMRI-compatible gustometers. Paper
Munoz Tord, D., Coppin, G., Pool, E. R., Mermoud, C., Pataky, Z., Sander, D., & Delplanque, S. Eneuro (2021)

Early spatial attention deployment towards aggressive voices. Paper
Burra, N., Kerzel, D., Munoz Tord, D., Grandjean, D., & Ceravolo, L. Social Cognitive and Affective Neuroscience (2019)