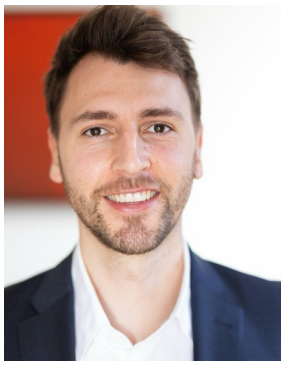
David De Ridder



Email : dn.de.ridder@gmail.com – Tel. +41(0)78/634.15.42 – Work permit : C –
LinkedIn : david-de-ridder – Website : daderidd.github.io

Highly motivated and mission-driven bioengineer with a PhD in spatial epidemiology, blending nine years of data science experience with healthcare and public health expertise. I thrive on tackling complex problems, crafting data-driven solutions that make a real impact. From leading complex projects to fostering cross-functional collaborations, I am known for my curiosity, analytical thinking and ability to communicate complex concepts clearly.

Professional Experience

Réseau Delta | Geneva, CH

Data scientist 2018.04 – …

- Developed data feedback solutions to improve the quality and efficiency of healthcare practices for 250,000+ patients and 1,000 physicians using full-stack Python development (SQL, Tableau, Streamlit, CSS, HTML).
- Implemented diverse machine learning for patient classification and profiling of 250,000+ individuals, leveraging health insurance claims to support data-driven decision-making in collaboration with the governance.

HUG, University of Geneva | Geneva, CH

Research Associate 2022.11 – …

- Leading a national-scale evaluation of integrative medicine cost-effectiveness, analysing 5-year insurance claims data in partnership with Groupe Mutuel using space-time modelling and causal inference.
- Spearheaded a consulting project for the Geneva cancer screening foundation, delivering key data analytics facilitating a strategic reassessment of future recruitment.
- Led a team of 4 in developing a digital dashboard, orchestrating full-stack Python development (Django, SQLite) and web design (CSS, HTML).

HUG, University of Geneva & EPFL | Geneva, CH

Postdoctoral Fellow 2021.07 – 2022.10

- Led a large COVID-19 project in collaboration with the CHUV, linking air pollution to epidemic trends using advanced analytics and spatially explicit machine learning (XGBoost, SHAP).
- Secured funding for a national-scale evaluation of integrative medicine effectiveness.
- Spearheaded a strategic mandate for the Canton of Vaud's Social Cohesion Department, employing data analytics to develop recommendations for optimizing social service allocation across the canton.

PhD candidate 2017.12 – 2021.06

- Conducted 3 research projects on health risk factors of 20,000+ individuals using spatial analytics and modelling, enabling targeted and informed public health interventions (3 peer-reviewed publications).
- Led two COVID-19 projects, proposing advanced geospatial approaches for enhanced epidemiological surveillance resulting in 2 peer-reviewed publications incl. in The Lancet Digital Health, press and TV coverage.
- Co-lead on the @choum project (CHF 250,000), a digital health app for COVID-19 symptom reporting and early outbreak detection resulting in 8,000+ downloads in Geneva 1 peer-reviewed publication in JMIR.
- Led a strategic consulting project for the Canton of Geneva's Health Department, developing data-driven recommendations to optimize COVID-19 vaccination resource allocation for high-risk groups across the canton.

Harvard Medical School - Dana Farber Cancer Institute | Boston, MA, USA

Bioinformatics technician 2016.03 – 2017.11

- Analysed protein networks and DNA sequences for human (Nature, 2020) and yeast interactome projects.

Graduate student researcher 2015.03 – 2015.09

- Identified 173 novel protein interactions involved in rare human diseases.

Education

PhD Life Sciences | University of Geneva, CH 2017 – 2021

- 20 articles published in peer-reviewed journals (inc. Nature, Nature Communications, The Lancet Digital Health) including 6 as first author.

MEng Bioengineering | University of Liège, Belgium 2013 – 2015

- Mobility scholarships for study and research exchanges at Harvard Medical School and Universitat Politècnica de Valencia (EUR 6,000).

BEng Bioengineering | Université Libre de Bruxelles, Belgium 2010 – 2013

Main skills

- **Project Management** : Fund acquisition, public speaking, leadership, negotiation and problem solving.
- **Programming Languages** : Proficient in Python and R; familiar with HTML and CSS.
- **Data Science** : Pandas, Scikit-learn, TensorFlow, XGBoost, Statsmodels, GitHub.
- **Geospatial data science** : Geopandas, ArcGIS, QGIS, GEE, Rasterio, GDAL, Folium, Shapely, Fiona.
- **Data Management** : SQL, PostGreSQL, PostGIS, DuckDB, SQLite.
- **Data Visualization, web & BI Tools** : Tableau, Django, Streamlit, Dash, Matplotlib, Seaborn, Plotly, Altair.

Certificates

- **Certificate in Public health –** Swiss Society of Public Health (SSPH+) 2022
- **Causal Inference & Diagrams –** HarvardX 2020
- **Entrepreneurship & Innovation -** Harvard Extension School 2016
- **Computer Science and Programming using Python -** MIT (edX) 2016
- **Psychological Components of Negotiation -** UCL (edX) 2016

Volunteering & outreach

Graduate Teaching Assistant – EPFL School of Environmental Engineering (ENAC) 2019-2020

- Co-instructed the "Exploratory Spatial Data Analysis" graduate course to 40+ students at EPFL and instructed multiple workshops, CAS and MAS, managing up to 80 students.

Volunteer Consulting project – Direction Générale de la Santé (DGS) 2021

- Identified areas of the canton combining high-risk populations and poor COVID-19 vaccination uptake to improve the DGS's vaccination strategy.

Volunteer Data Science and GIS Consultant – EPFL EssentialTech 2018-2019

- Optimized the location allocation for an innovative personal protective equipment using accessibility analyses and spatial modelling.

Additional information

Fluent in English and French, intermediate in Spanish. Enjoy triathlon, photography, rock climbing and maps!

Selected publications

De Ridder D, Ladoy A, Choi Y, Jacot D, Vuilleumier S, Guessous I, Joost S, Greub G. Environmental and geographical factors influencing the spread of SARS-CoV-2 over 2 years: a fine-scale spatiotemporal analysis (2024). *Frontiers in Public Health*

De Ridder D, Sandoval J, Vuilleumier N, Spechbach H, Joost S, Kaiser L, Guessous I. Geospatial digital monitoring of COVID-19 cases at high spatiotemporal resolution (2020).*The Lancet Digital Health*

De Ridder D*, Loizeau A*, Sandoval J, Erhler F, (…), Stringhini S, Kaiser L, Pradeau JF, Joost S, Guessous I. Detection of Spatiotemporal Clusters of COVID-19-Associated Symptoms and Prevention using a Participatory Surveillance App: The @choum Study Protocol (2021) *JMIR Research Protocols*