David De Ridder, PhD

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- **Strong experience in data science & analytics** : Nine years of experience in data management, visualisation, analysis, and machine learning (Pandas, Scikit-learn, TensorFlow, R, Tableau, SQL).

- **Business user collaboration**: Demonstrated experience working in different contexts and teams with a client-focused approach to understand data needs, drive project success and deliver bespoke solutions.

- **Communication and teamwork skills**: Excellent interpersonal and presentation skills, and a strong appreciation for leadership and teamwork.

- **Analytical mindset and proactive approach**: Fueled by curiosity and a keen attention to detail, I excel in breaking down complex problems and proactively delivering innovative, data-driven solutions.

Professional Experience

Réseau Delta | Geneva, CH

Data scientist   2018.04 – Current

- Created innovative data feedback solutions to improve the quality and efficiency of healthcare practices for over 250,000 patients and 1,000 physicians using full-stack Python development (SQL, Tableau, Streamlit, CSS, HTML).

- Implementing diverse machine learning techniques for patient classification and profiling, utilizing health insurance claims data to enhance quality and benchmark performance within the Delta healthcare network.

HUG, University of Geneva & EPFL | Geneva, CH

Research Associate   2022.11 – Current

- Leading a national-scale evaluation of integrative healthcare cost-effectiveness, analysing 5 years of insurance claims data in partnership with Groupe Mutuel. Employing space-time modelling, causal inference and spatial statistics in Python and R.

- Spearheaded a consulting project for the Fondation genevoise pour le dépistage du cancer to improve participation in the breast cancer screening program, delivering key (spatial) analytics facilitating a strategic reassessment of their future communication campaigns and recruitment.

- Oversaw a team of 5 in developing a digital dashboard for the Specchio study (a large digital population-based study), orchestrating full-stack Python development (Django, SQLite) and web design (CSS, HTML).

Postdoctoral Fellow   2021.07 – 2022.10

- Led a large COVID-19 project, underlining air pollution's role at detailed spatial scale, while offering insights into epidemic trends and diffusion dynamics using spatially explicit machine learning, Google Earth Engine and remote sensing.

- Successfully secured funding and ethical approval for an innovative, national-scale evaluation of integrative healthcare effectiveness involving over 10 million healthcare insurance claims.

- Conducted a strategic mandate for the Direction Générale de la Cohésion Sociale of the Canton of Vaud, focusing on optimizing the adequation between demand and supply in social services using spatial analytics.

PhD candidate   2017.12 – 2021.06

- Conducted multiple projects on the geospatial clustering of health risk factors and their determinants to enable targeted and informed public health interventions.

- Led three COVID-19 projects, showcasing the potential of geospatial approaches in enhancing epidemiological surveillance (2 publications including one in The Lancet Digital Health, multiple press releases and TV coverage).

- Key contributor in the decision-making and design process for the @choum project (CHF 250,000), a digital health app for COVID-19 symptom reporting and early outbreak detection (8,000+ downloads in Geneva, 1 publication).

- Led a consulting project for the Canton of Geneva's Health Department during the COVID-19 vaccination campaign, successfully identifying high-risk groups to enhance the DGS's vaccination strategy optimization.

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

Bioinformatics technician (CCSB | Vidal Lab)   2016.03 – 2017.11
- Performed data analyses (protein network analyses, community detection, DNA sequencing,…) for the human interactome project "HuRI" (Nature, 2020) and yeast interactome project "YeRI".

Graduate student researcher (CCSB | Vidal Lab)   2015.03 – 2015.09
- Thesis "Analysis of Interactome Perturbations Underlying Human Diseases". Identified 173 previously unknown human protein interactions involved in rare human diseases.

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, Git.
- **Geospatial data science** : Geopandas, ArcGIS, QGIS, Google Earth Engine, Rasterio, GDAL, Folium, Leaflet, Shapely, Fiona.
- **Data Management** : SQL, PostGIS, DuckDB.
- **Data Visualization, web & BI Tools** : Tableau, Django, Streamlit, Dash, Matplotlib, Seaborn, Plotly, Altair.

Volunteering & outreach

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

- 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)

- 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

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

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 (total EUR 6,000).

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

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

Personal Interests

Triathlon, photography (incl. collaboration with the city of Geneva), rock climbing, trail running, skiing.