Dr. Alexis **Gomel**

I am a data-driven researcher with over six years of experience in applying advanced data analysis, numerical modeling, and data science techniques to solve complex problems.

My curiosity driven personality has provided me with much experience learning new things which has allowed me to work in diverse topics such as optics, fluids and climate. I also enjoy getting involved in my communities, be it in the workplace, by volunteering in science divulgation projects, or in my local dance society (vereine) where I contribute as substitute teacher, Dj, and organizer.

Personal & contact

Nationality	Spanish and Argentinian	Residence	Munich, Germany
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Education

05/18 - 02/23	**PhD in Physical sciences**, *University of Geneva*,	*G.P.A:* 10/10
03/08 - 04/17	**M.S Physics**, *Universidad de Buenos Aires*,	*G.P.A:* 8.89/10

Hard skills

Expert	●●●	Python | Matlab | Git
Intermediate	●●○	SQL | Latex
Basic	●○○	Tableau & Dash (learning) | Cassandra | Spark | HTML | Poetry

Data science — Machine learning, data analysis, visualization and storytelling, data cleaning and pre-processing.

Mathematics — Regressions, spectral analysis, nonlinear differential equations, linear algebra, time series analysis.

Statistics — Ensemble statistics, uncertainty estimation, PCA, k-means, mutual information.

Physics — Non-linear dynamics, laser physics, fluid mechanics, statistical physics.

Libraries — Numpy, Pandas, PySpark, Sk-learn, Scipy, Matplotlib, Poetry, Keras.

Soft skills

Communication — Strong presentation skills in English and Spanish for expert and non-technical audiences.

Collaboration — Collaboration in interdisciplinary and multicultural teams.

Mentoring — Teaching more than 200 students in schools and universities.

Management — Managing research projects and mentoring master students.

Adaptability — Ability to quickly learn new topics.

Research — Ability do my own research and project documentation.

Language — Spanish (native), English (proficient), French (intermediate), German (A2 beginner).

Work experience

Mar 24 - Today **Professional break & personal development**,   **Munich, Germany**
- Upskilled through online courses in data science, and machine learning.
- Taken part in Kaggle data science competitions to gain real-world experience.
- Developed personal projects which can be found on my website.
- Studying German (A2) to enhance communication skills for professional and personal integration.

Apr 23 - Feb 24 **PDRA Researcher (short contract)**,   **Reading, United Kingdom**,
Mathematics of Planet Earth, University of Reading
- Developed scripts and algorithms in Python and Matlab for numerical simulation, data analysis and visualization. Developed tools to simulate climate scenarios and assess their impact.
- Worked with interdisciplinary teams to integrate their insights into my climate models as part of the TIPES (Tipping Points in the Earth System) EU horizon 2020 project.
- Relocated internationally for a short-term contract to collaborate with a team of interest.
- **Skills**: Data science & visualization, data analysis, numerical modeling, Python.

May 18 - Feb 23 **Physics PhD Researcher**,   **Geneva, Switzerland**,
Nonlinearity and Climate Group, University of Geneva
- Developed a new multi-scale models for gravity waves, enhancing simulations accuracy and understanding of wave phenomena for complex bathymetry scenarios and leading to a high-impact publication.
- Developed a theoretical model for extreme waves caused by bathymetry changes, with implications for coral reefs and coastal areas, using analogies from optical systems.
- Realized and analyzed an experimental validation of the theoretical framework, thanks to a collaboration with the University of Sydney, where I conducted experimental validation in real time using advanced data science techniques and custom KPI, leading to 2 publications in high impact journals.
- Collaborated with international teams in Sydney to validate theoretical results, leading to long-term research partnerships.
- **Skills**: Data science, data analysis, theoretical modeling, numerical simulations, collaboration, Python & Matlab.

May 18 - Dec 22 **A1 Assistant**,   **Geneva, Switzerland**,
University of Geneva
- Improved attendance and performance by enhancing coursework experiences, with Python and MATLAB based interactive materials, animations and visualizations.
- Taught in both English and French, coordinating with faculty to design exams and optimize course content.
- **Skills:** Mentoring and presentation. Coordination with colleagues and interactive coursework design.

Feb 16 - Apr 16 **Undergraduate Teaching assistant**,   **Buenos Aires, Argentina**,
University of Buenos Aires
- **Skills:** Communication, mentoring, crafting educational materials.