

# Dr. Filippo Broggini

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Zürich, Switzerland

Python, NLP, Cloud

GitHub: [github.com/filippo82](https://github.com/filippo82)

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I am a highly motivated and detail-oriented professional with extensive customer-facing experience who is looking to apply skills in a technology leadership role within an impactful organization dedicated to providing world class services. I have a broad and diverse experience in project planning and management, software development, cloud data platforms, NLP, and open-source software. I have a passion for transforming and analyzing large and diversified data sets using core principles of insights generation into simple stories for stakeholders. I am a team leader who is capable of motivating and inspiring others. I am a problem solver and fast learner with the ambition of continuously pushing the status quo without compromising service or quality.

## Work Experience

Senior Solutions Engineer - Squirro AG, Zürich, Switzerland

May 2020 - Present

- Currently leading the design, planning, and implementation of a complex project for a neo bank: ingestion of external data sources, design of infrastructure, automation, fine-tuning of NLP models for text classification, recommender systems, UI design, web APIs design, project management (Python, GCP, NLP, HuggingFace, recommender systems, web APIs, Ansible, Terraform)
- Planned, managed, and implemented, either alone or in a team of 2 people, 10 fast-evolving projects (1 to 6 months) for industries such as finance, banking, pharmaceutical, chemical and consumer goods, energy, and sales (Python, Javascript)
- Worked directly with customers and end-users on a planning and operational level throughout multiple stages of a project (pre-sales, solution design, implementation, and support) which resulted in a customer satisfaction of 93%
- Successfully applied Natural Language Processing techniques (sentiment analysis, topic modeling, document similarity, semantic search) to unstructured data discovery and analysis for customers success which resulted in 10 SQLs and the creation of a new product (Python, Gensim, spaCy, HuggingFace)
- Designed and implemented multiple insights dashboards and an intuitive recommender system during the last phase of a proof-of-concept project which lead to a full rollout involving more than 3000 users/licenses (Python, Javascript)
- Built data connectors for premium data sources (e.g., Morningstar, LexisNexis, Refinitiv, PitchBook), CRM (e.g., Salesforce), and proprietary data sources (REST-API-based), and integrated the extracted data into Squirro or other existing platforms
- Collaborated with delivery and sales team members on customer use cases to determine technical requirements to delivery business outcomes which resulted in 5 additional product demos
- Created the first full-stack (backend and frontend) [developer documentation](#) (Sphinx, JSDoc)
- Started the initial porting of web APIs from Flask to FastAPI which improved the API documentation

Software Engineer - ETH Zürich, Zürich, Switzerland

January 2019 - March 2020

- Lead the design, development, and optimization of a seismic wave propagation modeling software (C++, Python) which resulted in the awarding of multiple grants from the Swiss National Supercomputing Centre (CSCS) for the development of high-performance computing (HPC) applications (500K node hours were made available as part of the grant)

Senior Scientist - ETH Zürich, Zürich, Switzerland

January 2017 - December 2018

Postdoc - ETH Zürich, Zürich, Switzerland

September 2013 - December 2016

- Developed new applications to tackle long-standing problems in subsurface imaging and published the findings in 10+ peer-reviewed journals and conference proceedings

- Established scientific cooperation with international teams which resulted in 35+ peer-reviewed publications and contributed to a successful EU-funded project involving 15 academic and industry partners (WAVES ITN project) with a budget of €3.200.000
- Established a PhD project by writing a successful proposal funded by a multinational energy company with a budget of €300.000
- Supervised a team of PhD (5) and MSc students (6), and co-authored 10 peer-reviewed publications

### Geophysicist Summer Intern - Schlumberger Cambridge Research, Cambridge, UK Summers 2010 & 2011

- Planned novel physical experiments and developed software (MATLAB) to analyze and process the acquired data which resulted in a novel patented algorithm

### Scientific Software Developer - Università di Pisa, Pisa, Italy

October 2007 - July 2008

- Optimized a software (C, OpenMP) for the simulation of seismic wave propagation which resulted in a 20x speed-up

## Leadership and awards

- Founding and current [board member](#) of the [Software Underground](#) society (not-for-profit)
- Chairman of the [EAGE Young Professional](#) group (2014 to 2018) and member of the [EAGE Education Committee](#): pushed for the introduction of the first Data Science courses in the course catalog
- Co-organized two online conferences for Software Underground: [Transform 2020](#) and [Transform 2021](#)
- Won a prize at a [hackathon on machine learning and visualization](#) applying computer vision techniques (OpenCV) and developing a web application for exploring geoscience data (scikit-learn, Dash)
- Organized multiple successful workshops and hackathons on reproducible science, visualization, and machine learning attended by 50 participants each
- PhD Thesis: Winner of the Gustavo Sclocchi Theses Award presented by EAGE, Assomineraria, and SPE
- MSc Thesis: Awarded 110/110 cum laude

## Open-source projects

- Open-source software advocate with active engagement in the Software Underground community
- [SwungHub](#), a computational platform based on [JupyterHub](#), Dask, and Conda Store (Kubernetes, Terraform)
- Former developer of [Madagascar](#), an Open-Source Software Package for Multidimensional Data Analysis

## Education

### PhD, Exploration Geophysics - Colorado School of Mines, CO, USA

August 2008 - May 2013

*Exploration geophysics, data processing, high-performance computing (HPC), outreach*

- Developed a novel and innovative geophysical method, [Marchenko focusing](#), now used and further investigated by many international research groups (TU Delft, Utrecht University, University of Edinburgh, KAUST, NTNU) and energy companies (Shell, Schlumberger, Petrobras, Equinor)

### MSc, Exploration and Applied Geophysics - Università degli Studi di Milano, Italy

Sept 2004 - Sept 2007

*Exploration geophysics, data processing*

### BSc, Telecommunications Engineering - Politecnico di Milano, Milan, Italy

Sept 2001 - August 2004

*Signal processing, telecommunications network*