# Nicolas Gensollen


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## INTERESTS

I am a **computer scientist with a strong interest in software development and open source**.
My main research interests are related to complex systems, machine learning, and networks.
Since November 2020, I am a member of the PARIETAL team at INRIA Saclay, working on machine learning softwares for neuroimaging. More information available on my website.

## EXPERIENCE

**INRIA**, *Research Engineer* — Nov 2020 - Now
Engineer in the PARIETAL team, at INRIA, Saclay. Working on developping and maintaining neuroscience and machine learning softwares.

**LIP6**, *Postdoc Researcher* — Dec 2018 - Oct 2020
Postdoc in the Complex Networks team, at LIP6, Sorbonne University. Working on anomaly detection in large streams of interactions using a link stream based approach.

**NREL**, *Postdoc Researcher* — Mar 2017 - Nov 2018
Postdoc in the Power System Design and Studies group at NREL, working on stochastic optimization methods for power system engineering.

**CONSEIL GENERAL 77**, *Intern* — Jul 2011 - Jan 2012
Intern working on the development of a scenario-pricing tool for Optical fiber deployment in the French Seine-et-Marne region.

## EDUCATION

**PHD. COMPUTER SCIENCE** — Oct 2013 - Oct 2016
*Telecom SudParis*
PhD fellowship awarded by Telecom SudParis.
Telecommunications Networks and Services Department, Mines-Telecom Institute, CEA Saclay Nano-Innov.
Advised by: Vincent Gauthier,Michel Marot, and Monique Becker.
Thesis: Modeling and Optimizing a Distributed Power Network: A Complex System Approach of the Prosumer Management in the Smart Grid
Defense date: 7th October 2016

**ENGINEER DEGREE - TELECOMMUNCATION** — Sep 2009 - Sep 2012
*Telecom SudParis*
Telecommunication engineer student, Telecom SudParis, Evry, France.
Last year option: Networking.
Advised by Laurent Bernard and Eric Gangloff.

## SKILLS

*Languages:*

- Native Speaker
- Professional
- Conversational level

*Soft skills:*

- Problem-solving, creativity, and accountability
- Time managment, open-mindedness, and adaptability
- Communication, teamwork spirit, patience, and humility

*Technical skills and incomplete list of related favorite tools:*

- **Scientific programming and scripting:** Python, Julia, Bash, Matlab
- **Web development:** HTML, CSS, PHP, JavaScript
- **Other programming languages:** C, C++, C#, Visual Basics
- **VCS, CI, CD:** Git, GitHub, GitLab, Jenkins
- **Writing and Documentation:** LaTeX, Markdown, Sphinx, Documenter.jl
- **Machine Learning:** Scikit-learn, TensorFlow, PyTorch, Flux.jl, statsmodels
- **Optimization and scientific programming:** NumPy, Scipy, Pandas, JuMP
- **Visualization:** Matplotlib, Plotly, Dash, Seaborn
- **Data Bases:** MySQL, PostgreSQL, MongoDB, PostGIS, SQLAlchemy, JuliaDB
- **Containerization:** Docker
- **Graphs:** NetworkX, NetworKit, igraph, Gephi, LightGraphs.jl
- **Parallel Computing:** Dask, Spark, Moab, TORQUE
- **Power System Modeling:** OpenDSS, CYME, Synergi, DEW

## OPEN SOURCE MAIN CONTRIBUTIONS

This section includes some of my contributions to open source softwares and datasets. Find more on my GitHub profile.

### Libraries

**2021** **Nilearn:** Core-developer and maintainer
Nilearn is a python package for fast and easy statistical learning on neuroimaging data.

**2019** **StreamGraphs.jl:** Creator
StreamGraphs.jl is a Julia package to work with stream graphs and link streams.

**2018** **DiTTo (Distribution Transformation Tool):** Creator and core-developer 2017 - 2018
DiTTo is a Python package which aims at providing an open source framework to convert various distribution system modeling formats.

### Datasets

**2018** **Santa-Fe Synthetic Network:** This dataset is a large-scale synthetic distribution and sub-transmission network for the city of Santa Fe, New-Mexico, USA.

**2017** **The Power Grid Dataset:** This is a dataset of topologies of real power grid systems.
Developed at Telecom SuParis.

### Community

**2021** **Nilearn dev-days 2021:** Organizer
This online international coding sprint took place March 5th-7th 2021 around Nilearn and Nibabel.

## TEACHING AND ADVISING

**2020** Mentoring Master student M. Olivier Pierre on *Robustness of Web of Trust Mechanisms*.
Introduction to the modeling of dynamical systems (UPMC, ARE, L1),
coordinator: Nicolas Maudet. 40 hours

**2019** Introduction to the modeling of dynamical systems (UPMC, ARE, L1),
coordinator: Nicolas Maudet. 40 hours

**2016** Mentoring Master student M. Lester Padilla on *Reconstructing the European Power Grid from OpenstreetMap data*. Apr. 2016 - Sept. 2016.

**2016** Monitorat at UPMC. Programming basics in Python (L1), coordinator: Fabien Tarissan
Python programming (M1). 64 hours

**2015** Monitorat at UPMC. C programming project (L3), coordinator: Xavier Clady,
Artificial Intelligence for 2 players games (L2), coordinator: Sylvain Lamprier. 64 hours

**2014** Monitorat at UPMC. TCP/IP Networking (M1), coordinator: Promethee Spathis,
C programming project (L3), coordinator: Xavier Clady. 64 hours

## PUBLICATIONS

### Conferences

**2019** Nicolas Gensollen, Matthieu Latapy
*Interplay between social and financial interactions in a crypto-currency*,
Presented at MARAMI 2019 in Dijon, France.

**2019** Akshay Kumar Jain, Kelsey Horowitz, Fei Ding, Nicolas Gensollen, Barry Mather, and Bryan Palmintier,
Quasi-Static Time Series PV Hosting Capacity Methodology and Metrics,
Presented at the 2019 IEEE Conference on Innovative Smart Grid Technologies (ISGT) in Washington D.C.

**2016** Nicolas Gensollen, Vincent Gauthier, Michel Marot, Monique Becker,
Submodular Optimization for Control of Prosumer Networks,
Presented at the 2016 IEEE SmartGridComm in Sydney.

**2015** Nicolas Gensollen, Monique Becker, Vincent Gauthier, Michel Marot,
Coalition Formation Algorithm of Prosumers in a Smart Grid Environment,
Presented at the 2015 IEEE International Conference on Communications (ICC) in London.

### Journals

**2020** Nicolas Gensollen, Matthieu Latapy
Do you trade with your friends or become friends with your trading partners?
*A case study in the G1 cryptocurrency*,
Applied Network Science, 2020.

**2019** Nicolas Gensollen, Kelsey Horowitz, Bryan Palmintier, Fei Ding, and Barry Mather,
Beyond Hosting Capacity: Using Shortest Path Methods to Minimize Upgrade Cost Pathways,
IEEE Journal of Photovoltaics, vol. 9, issue 4, 2019

**2018** Nicolas Gensollen, Vincent Gauthier, Michel Marot, Monique Becker,
Stability and Performance of Coalitions of Prosumers Through Diversification in the Smart Grid,
IEEE Transactions on Smart Grid, vol.9, issue 2, 2018