Nicolas Gensollen

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INTERESTS

I am a software engineer with a research background in **computer science**. I have a strong interest in open source projects, machine learning, and computer vision.
Since February 2022, I am a permanent research engineer at the INRIA Paris center. I work mainly with research teams focusing on neuro-science with complex machine learning and computer vision underlying problems. More information available on my website.

EXPERIENCE

INRIA, *Research Engineer*   Feb 2022 - Now

Permanent engineer in the INRIA Paris center, working mainly with the ARAMIS team located at the Paris Brain Institute (ICM). I am working on machine learning and computer vision problems through the design and development of open source softwares like Clinica, ClinicaDL, or Leaspy.

INRIA, *Research Engineer*   Nov 2020 - Jan 2022

Engineer in the PARIETAL team, at INRIA, Saclay. Working on developping and maintaining neuro-science 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-mindeness, 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

2022   **Clinica:** Core-developer and maintainer
Clinica is a software platform for clinical research studies involving patients with neurological and psychiatric diseases and the acquisition of multimodal data.

2021 - 2022   **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