Samuel Niang

FullStack
Python/JS developer
Physicist

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Platforms —

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Skills —

> **Language**
- ▸ French (native)
- ▸ English (fluent)
- ▸ Italian (B2-CILS)

> **Programming**
- ▸ Python
- ▸ JS, HTML5, CSS3
- ▸ React, SQLite
- ▸ PHP, MySQL
- ▸ C/C++, JAVA
- ▸ Git

> **Data analysis skills**
- ▸ Machine Learning
- ▸ Scikit-learn, Scipy
- ▸ Apache Spark

Other —

> **Hobbies**
- ▸ Violin
- ▸ Running
- ▸ Italian cuisine

Work Experience

💼 Physicist, Accelerator engineer *04/22 - 03/25* — CERN, Geneva
Development of the FLUKA calculations required for the whole injector chain, from LINACs to SPS, through the various target areas.
- **Programming** Python, Fortran, JS, HTML5, CSS3
- **Tools** Git, GitLab, Monte-Carlo simulation, Data, pySpark
- **Management** Student supervision, project management, teaching at the FLUKA course.
- **Trainings** CERN Accelerator School, FLUKA course.

💼 Physicist *02/21–01/22* — CERN, Geneva
Development of the GBAR's positron line. Position funded by CNRS/IJCLab.
Development of the hardware and software to control the line, and detect the particles.
- **Programming** Python, C/C++, Labview
- **Management** Student supervision, project management

💼 Internship *04/17–08/17* — IPNL, Lyon
Calibration of the CMS calorimeters for the particle flow reconstruction.
Creation of a Python library based on machine learning to obtain the energy of a particle from the signals in the detectors.
- **Programming** Python, C++
- **Tools** Git, Root, Scikit-learn, Machine-Learning

💼 Internship *05/16–08/16* — Subatech, École des Mines de Nantes
Modeling atmospheric particle shower from cosmic ultra-high energy radiation and simulation of their radio-detection.
Modification of a Monte-Carlo program (SElFAS) written in C++ to improve the model.
- **Programming** Matlab, C/C++

💼 Internship *06/15–09/15* — Observatory of Paris, Meudon
Processing of images from the GAIA satellite. Astrophysics, Astrometry.
- **Programming** Java, R

💼 Internship *02/14–03/14* — Apex Tool Group, Ozoir-La-Ferrière
Compulsory internship for the engineering school.

Education

🎓 PhD in Particle Physics *2017–2020* — Paris-Saclay University and CERN
Subject *Optimisation of positron accumulation in the GBAR experiment and study of space propulsion based on antimatter.*
Keywords *Non-neutral plasma, Penning-Malmberg Trap, Greave-Surko Trap, Labview, Labview FPGA, NI devices, Geant4, Python, C++*
Teaching *Teaching assistant at Paris-Diderot University (09/17–12/17). IT lectures.*

🎓 Master of Physics *2015–2017* — École Normale Supérieure, Lyon
Keywords *Quantum physics, Field theory, Particle physics, Relativity*

🎓 Engineering degree *2013–2016* — ENS Mines de, Saint-Étienne
Description *General engineering, specialization in IT and physics. Last year followed at the ENS of Lyon.*
Exchange *4 months a Polytechnic School of Montréal to study quantum mechanics, graph theory, and robotics.*
Keywords *High-throughput computing, Material physics, Nanotechnology, Management, C/C++, JAVA, JS, HTML5, CSS3, R, Python, MySQL, PHP*

🎓 CPGE *2010–2013* — Georges Clemenceau, Nantes
Description *Preparation for national competitive entrance exams to French "Grandes Écoles", specializing in physics and chemistry.*

Publications

2024 Latest FLUKA developments, EPJN, doi:10.1051/epjn/2024023
2024 Performance of the CERN PS internal dump: numerical simulation studies and comparison with beam measurements, JINST, doi:10.1088/1748-0221/19/06/T06002
2023 Production of antihydrogen atoms by 6 keV antiprotons through a positronium cloud, EPJC, doi:10.1140/epjc/s10052-023-12137-y
2022 Positron accumulation in the GBAR experiment, NIMA, doi:10.1016/j.nima.2022.167263
2021 A pulsed high-voltage decelerator system to deliver low-energy antiprotons, NIMA, doi:10.1016/j.nima.2021.165245
2021 Positron production using a 9 MeV electron LINAC for the GBAR experiment, NIMA, doi:10.1016/j.nima.2020.164657
2020 Development of a PbWO4 Detector for Single-Shot Positron Annihilation Lifetime Spectroscopy at the GBAR Experiment, APP, doi:10.12693/APhysPolA.137.122
2020 Accumulation of Positrons from a LINAC Based Source, APP, doi:10.12693/aphyspola.137.164