



NONO SAHA CYRILLE MERLEAU

Bioinformatician

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RESEARCH INTERESTS

RNA folding Deep Learning
RNA Design Data Science
Sequencing Data Analysis
Evolutionary Dynamics (ED)
Evolutionary Algorithms (EAs)
Genome-wide association
Discrete Optimization
Software Security

PROGRAMMING LANGUAGES

JavaEE Python JavaSE
SQL HTML CSS JS
TypeScript C++ C
Pascal Bash

SOFTWARE ENGINEERING

SpringMVC Spring-surf
Alfresco Spark Django
Angular 12 GreenDAO
Hibernate mybatis ExtJS
FreeMarker

MODELLING LANGUAGES

ArgoUML Visual paradigm
UML Enterprise Architect
GAMAL

WEB SERVERS

XAMP Tomcat Apache

VERSIONING TOOLS

GIT SVM

ABOUT ME

Designing new algorithms for real life problems is what I enjoy doing the most. I like constant learning working environments, and my research interest includes RNA inverse folding, RNA folding, evolutionary dynamics, RNA viruses, Deep learning, software engineering and software security.

EXPERIENCES

Junior Researcher | Max Planck Institute of Mathematics in the Sciences

September 2018 – Present

Leipzig, Germany

- PhD student in Bioinformatics.

Java/J2EE Software Engineer (freelancer) | Koosserydesk Sarl

September 2015 – February 2018

Paris, France

- ECM server, based on Alfresco technology for the management of document-ary contents.
- WORKING-SPACE functional server, providing the space capabilities of document-ary work and relying on ECM and BPM technical servers.
- Java layer based on the Spring-surf-MVC framework. This layer communicates with the WORKING-SPACE functional server.
- Graphical interface based on the Sencha-Ext-JS framework. The interface communicates with the java layer in REST mode.

Java developer | Afreetech Sarl

August 2017 – October 2017

Yaoundé, Cameroon

- Frontend with Java layer based on the Spring-surf-MVC framework and graphical interfaces based on AngularJS.
- Backend with SpringData and Liquibase

Assistant lecturer | Mathematics and Computer Science Department, Ngaoundéré University

October 2016 – November 2016

Ngaoundéré, Cameroon

- Tutorials in advanced SQL and some practical cases using MySQL and PostgreSQL.
- Tutorials in object oriented data base and practical case using ObjectDB.
- Tutorials in NoSQL and some practical cases using MongoDB

Assistant technician | Innovative Technologies Sarl

June 2015 – September 2015

Ngaoundéré, Cameroon

- Installation and implementation of a Free Park Manager(GLPI).
- Implementation of network installation plans for partner clients (FNE, NAFISSA College).

DATABASE SYSTEMS

MySQL PostgreSQL

MongoDB SQLite

COMPILING TOOLS

Maven Ant Gradle

G++

NETWORK SYSTEMS

NFS NAT DHCP

DNS SSH Ubuntu Mirror

INTERNET PROTOCOLS

TCP/IP ICPM POP3

INTERNET SOFTWARE

Firefox Google chrome

Opera Mini Thunderbird

Slack Skype Outlook

NETWORK SOFTWARE

Postfix Wireshark Bind9

Packettracert NS3

OPERATING SYSTEMS

Ubuntu Debian Pfsense

BackTrack Windows XP

Linux Windows Vista

Windows 7 Windows 8

Windows 10 MacOS

OFFICE SUITE

Word Excel Publisher

Access PowerPoint

PERSONAL INTERESTS

Teamwork spirit Reading

Problem solver Football

Synthesis spirit Basketball

Dancing Entrepreneurship

- Installation of video surveillance cameras.
- Network administration within system of company and hardware maintenance within the company and partner customers.

Mathematics Teacher for extra lessons | [Classes III and upper level, secondary school](#)

September 2011 – May 2012

Ngaoundéré, Cameroon

Sales and promotion officer | [MAYOR Sarl](#)

July 2009- August 2009

Maroua, Cameroon

EDUCATION

Ph.D. in Bioinformatics | [Max Planck Institute of Mathematics in the Sciences](#)

September 2018 – Present

Leipzig, Germany

- Ongoing
- Thesis entitled: *From RNA folding to inverse folding: a computational study*

M.Sc. in Mathematical Sciences | [African Institute for Mathematical Sciences| University of Ghana](#)

2017 – 2018

Biriwa, Ghana

- Obtained with 78/100
- Thesis entitled: *Evaluation of libraries implementing symbolic regression*

M.Sc. in Computer Science | [The University of Ngaoundéré](#)

2012 – 2014

Ngaoundéré, Cameroon

- Obtained with 15.56/20
- Thesis entitled: *Malware detection method based on system call for android applications*

B.S. in Mathematics and Computer Sciences | [The University of Ngaoundéré](#)

2009 – 2012

Ngaoundéré, Cameroon

- Obtained with 13.21/20

High School Diploma (Bacalauréat C) | [LYCLAMOMA](#)



2008 – 2009

Maroua, Cameroon

PUBLICATIONS

An evolutionary algorithm for inverse RNA folding inspired by Lévy flights | [BMC bioinformatics \(Published\)](#) |  | 

2022, *Nono SC Merleau, Matteo Smerlak*

RAFFT: Efficient prediction of RNA folding pathways using the fast Fourier transform | [PLoS Computational Biology](#) |  | 

2021, *Vaitea Opuu, Nono SC Merleau, Vincent Messow, Matteo Smerlak*

LANGUAGES

French: **Native or bilingual proficiency**

English: **Professional working proficiency**

German: **Limited working proficiency (B1-Level)**

Fulfulbé : **Mother tongue**

Bafoussam: **Mother tongue**


REFERENCES

Dr. Matteo Smerlak

 matteo-smerlak

 smerlak@mis.mpg.de

Dr. Philip J. Gerrish

 philip-gerrish-2139986

 pgerrish@unm.edu

Dr. Ivan P Yamshchikov

 kroniker


 iyamshchikov@hse.ru

Why are viral genomes so fragile? The bottleneck hypothesis | [PLOS Computational Biology \(Published\)](#) |  | 

 2021, *Nono SC Merleau, Sophie Périsson, Philip J Gerrish, Santiago F Elena, Matteo Smerlak*

A simple evolutionary algorithm guided by local mutations for an efficient RNA design | [GECCO'21 \(Published\)](#) |  | 

 2021, *Nono SC Merleau, Matteo Smerlak*

It Means More if It Sounds Good: Yet Another Hypothesis Concerning the Evolution of Polysemous Words | [COMPLEXIS \(Published\)](#) | 

 2020, *Ivan P Yamshchikov, Cyrille Merleau Nono Saha, Igor Samenko, Jürgen Jost*

Holonification model for a multilevel agent-based system | [Personal and Ubiquitous Computing \(Published\)](#) | 

 2019, *Igor H. Tchappi, Stéphane G., Vivient C. Kamla, J.-C. Kamgang, Cyrille M. S. Nono, Hui Z.*

CONFERENCES, WORKSHOPS AND VISITS

Computational approaches to RNA structure and function


 August 2022

 Benasque, Spain

Two talks, on RNA design and RNA kinetics.

GDR Bioinformatique Moléculaire

 November 2021

 Lyon, France

No talk.

GECCO 2021 - The Genetic and Evolutionary Computation Conference

 July 2021

 Lille, France

One talk on Evolutionary algorithm applied to RNA design.

AlgoSB Winter School on Mathematical and Computational Methods for Structured Ribo-Nucleic Acids | [CIRM](#)

 January 2019

 Luminy, France

One talk on RNA design.

GECCO 2019 - The Genetic and Evolutionary Computation Conference

 July 2019

 Prague, Czech Republic

No talk.

Visitor-SDU Biorobotics, MMMI, University of Southern Denmark

 December 2018

 Copenhagen, Denmark

One talk on novelty search applied to RNA design.

CERTIFIED COURSES


Deep Learning Specialization | [Coursera](#)


 December 2018- March 2019

 Online

A set of 4 online non-credit courses authorized by deeplearning.ai


Complex Analysis | [TUC, Faculty of Mathematics](#)

 January 2018

 Chemnitz, Germany

An online course which accounts for a total of 4 ETCS credits with a result of 100

LPI 101 and 102: Certified Linux Level 1 (LPIC-1) | 

 January 2015

- LPI code: LPI000334389 and verification code: yfm4sc7a49