

# Simon CROUZET

PHD CANDIDATE IN COMPUTATIONAL BIOLOGY



## Qualifications

2023 - ...

**Ecole Polytechnique Fédérale de Lausanne (EPFL) – Lausanne (Switzerland)**  
**Ph.D. in Computational and Quantitative Biology**

2021 - 2022

**Ecole Normale Supérieure (ENS-PSL, part of Paris Science et Lettres) – Paris (France)**  
**M.Sc. in Systems biology, Genomics and Bioinformatics** - with First Class Honours

2020 – 2021

**Sorbonne University - Paris (France)**  
**M.Sc. in Bioinformatics and Modelling** - with High Honours

2019

**Linnaeus University - Växjö (Sweden)**  
**Semester Abroad during B.Sc. in Computer Science**  
Semester 5 of my Bachelor of Computer Science through the mobility program ISEP Study Abroad

2017 – 2020

**Aix-Marseille University – Marseille Luminy (France)**  
**B.Sc. in Computer Sciences** - with First Class Honours

2016 – 2017

Interruption of studies due to health issues

2013 – 2016

**Grenoble Alpes University – Saint-Martin-d'Hères (France)**  
**B.Sc. in Chemistry**



## Work experiences

from 2023  
(Ongoing)

**Doctoral Assistant at EPFL School of Life Sciences**  
*Ecole Polytechnique Fédérale de Lausanne (Switzerland)*  
Development of AI approaches and computational methods in structural biology, with diverse applications in protein and drug design.

Summer and  
Autumn 2022

**Computational Biologist Intern (IP2TIS Fellow) at Roche pRED-PMDA**  
*Roche pRED Pharma Research and Early Development (Switzerland)*  
Analysis of data generated by phenotypic screens with a focus on causal inference, network-based machine learning and interpretable graph neural network, to identify putative high-potential targets for novel drug discovery programmes.

Winter and  
Spring 2022

**Research Intern at ETH Zürich D-BSSE**  
*ETH Zurich (Switzerland)*  
Design, implementation, and evaluation of computational methods for predicting HIV evolutionary pathways and for designing optimal drug combinations.

Summer 2021

**Research Assistant at Wellcome Sanger Institute**  
*University of Cambridge (England)*  
Structural variation of genomes and pangenomics exploration of Anopheles Funestus (mosquito, major vector of malaria)

Spring and  
Summer 2020

**Research Intern at the Institute of Biodiversity, Animal Health and Comparative Medicine**  
*University of Glasgow (Scotland)*  
Development and improvement of a viral host prediction model in Julia through genomic feature, phylogenetic neighbourhoods (using BLAST search) and protein characteristics, following the first version available on <https://bioinformatics.cvr.ac.uk/software/viral-host-predictor/>.

Summer 2018

**Research Intern at Laboratoire d'Informatique & Systèmes**  
*Aix-Marseille University - Campus of Marseille Luminy (France)*  
Development in C of an automaton network solver using data-flow algorithms to model genetic regulatory networks as the control of floral morphogenesis in *Arabidopsis Thaliana*.



## Publications & Projects

ORCID: [0000-0002-5012-4621](https://orcid.org/0000-0002-5012-4621)

### Publications & Conferences:

- Yasser Mohseni Behbahani, Simon Crouzet, Élodie Laine, Alessandra Carbone, *Deep Local Analysis evaluates protein docking conformations with Locally oriented Cubes* (Bioinformatics 2022, doi: [10.1093/bioinformatics/btac551](https://doi.org/10.1093/bioinformatics/btac551))
- Simon Crouzet, Matthew Arnold, Nardus Mollentze, Richard J. Orton, Daniel G. Streicker, Simon A. Babayan, *High-performance and modular identification of virus hosts of origin utilising machine learning of genomic signatures in Julia* (work in progress, talk presented on eSCAMPS 2021)



## Volunteering

- International Ecovolunteering during the month of June 2019 with the NGO *Archelon* on a sea turtle conservation project in Kyparissia Bay (Greece), and during the month of November 2022 with the NGO WFFT on a elephant refuge project in Phetchaburi (Thailand)
- Volunteering in several student associations, including *Asso'M* (event-driven student association) as well as *FAMI* (representation student association), *TACT* (large-scale sport event, as a Financial Officer), *BDE Luminy* (student association, as a Treasurer) or *Multicultural Växjö* (charitable student association).
- Representative student at *CVEC* (Contribution à la Vie Étudiante du Campus) and at Department "Informatique et Interaction" council of Aix-Marseille University.
- Ambassador for *COP2 Étudiante*, a national summit to negotiate a global agreement on ecological and social transition within French higher education.



## Skills

### Programming:

#### Languages:

Main: Julia, Python  
Others: R, Java, C, C++, SQL, Matlab, PHP, HTML/CSS, Mathematica

#### Fields of Interest:

Machine Learning, Deep Learning  
Neural Networks, Computational Biology, Artificial Intelligence, Drug Discovery, Precision Medicine, Genomics, Systems Modelling, Problem Solving

#### OS:

Windows, GNU/Linux

#### Tools:

Git, Unit Testing, Gurobi, UML, POO, PowerBI, Cluster Usage

#### Transversal:

Project Management  
Microsoft Office



## Languages

French: Native

English: Fluent  
TOEFL iBT (04.2020): 99/120



## Personality

### Some words to describe me:

Involved, serious, versatile, curious, with a strong critical mind. Perfectionist, pedagogue, rigorous and perseverant.

Highly interested in sciences since childhood, nurtured by self motivation via documentaries, lectures, scientific articles, online courses, newsgroups, popular science movies and online searches.

Hobbies: Photography, Travels, Sport (Cycling, Hiking, Skiing, Climbing, Badminton), DJing, Cooking, Reading, Internet & Video Games...



## Contact

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