

NICOLAS CHAGNET

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Leiden, NL

NicolasChagnet

nchagnet



EXPERIENCE

Research Scientist and Teaching Assistant

Leiden University

- 09/2020 – OngoingLeiden, The Netherlands
- Numerical simulations:** Simulated periodically undulating black holes. Leveraged the computational power of the Dutch national supercomputer Snellius.
 - Languages:* Python (in-house BVP solver), Julia, C (PETSc).
 - Model building:** Created mathematical models from theory to match the patterns in a large dataset (hydrodynamic behaviour of relativistic fluids). Validated and refined models based on numerical outcomes and theoretical considerations.
 - Skills:* Advanced mathematics, data analysis, reporting on data
 - Deliverables:** Authored and published articles in peer-reviewed academic journals showcasing results and data visualization. Presented research findings at international scientific conferences (Stockholm, Trieste).
Publications: inspirehep.net/authors/1944891.
 - Taught the **Complex Networks** tutorials class for four semesters.

Research intern in Theoretical physics

Leiden University, University of Amsterdam

- 02/2018 – 08/2020The Netherlands
- Project 1:** Analyzed the distance metric between quantum circuits and established a connection to the geometry of spacetime.
 - Skills:* Advanced mathematics, pattern recognition, interdisciplinary thinking.
 - Project 2:** Established a novel model for a stable quantum electron star, verified using numerical simulations.
 - Skills:* Scientific computing (Julia, Mathematica), innovative thinking.

Research intern in Applied physics

Swiss Plasma Center

- 05/2017 – 08/2017Lausanne, Switzerland
- Improved component (thermal detectors) of a large collaborative project (fusion reactor experiments)
 - Embedded systems programming for automation of calibration bench.

PERSONAL PROJECTS

Data science and Machine Learning

scikit-learn

TensorFlow

Experience in analysis, cleaning datasets, and building predictive models.

Ising simulations

Monte-Carlo

Genetic algorithms

Simulations of phase transitions in statistical physics.

Coding projects

Python

Rust

Web scraping

Experience building tools, platforms with various programming languages.

SKILLS

- Programming languages and tools**
Proficiency in **Python**, **Julia**.
Experience in **Rust**, **C/C++**, **HTML/CSS**, **Javascript**.
Familiarity with **Linux**, **Shell scripting**, **LaTeX**, **Databases (SQL, NoSQL)**
- Interdisciplinary background**
Strong background in **Mathematics**, **Physics** and **Computer Science**.
- Communication**
Great communication skills from teaching experience and research collaborations.
- Challenger**
Sharpened problem-solving skills from extensive research experience and eager to face new challenges.

EDUCATION

Ph.D. in Theoretical Physics

Leiden University

09/2020 – OngoingLeiden, NL

M.Sc. in Theoretical Physics

ENS de Lyon

09/2017 – 08/2019Lyon, FR

LANGUAGES

- English**
Bilingual
- French**
Native
- Italian**
Intermediate
- Dutch**
Beginner