

Nelly Barret

Post-doctoral researcher at Politecnico di Milano

🌐 <https://nelly-barret.github.io> — [nelly-barret](#) — [ORCID](#)

Research experience

Post-doc: Better real-world health-data distributed analytics research Apr. 2024 - Apr. 2025
Politecnico di Milano *Milan (IT)*

In this European project, we (i) propose a **data model** for integrating clinical, genomic, and imaging data; (ii) propose and implement an **ETL pipeline** to integrate and FAIRify such data. Afterwards, clinicians will **browse and query data** to better understand 3 genetic rare diseases.

PhD: user-oriented exploration of semi-structured datasets Jan. 2021 - March 2024
Institut Polytechnique de Paris and Inria Saclay *Palaiseau (FR)*

We propose novel **graph-based** methods to apprehend semi-structured datasets (XML, JSON, CSV, RDF, PG) with (i) **Entity-Relationship-like summaries** and (ii) **entity-to-entity path enumeration and ranking**, both computed from one or several heterogeneous datasets.

Internship: predicting the environment of a neighbourhood with Predihood Feb. - July 2020
LIRIS *Villeurbanne (FR)*

In this interdisciplinary project, we first (i) **select relevant features** using a dedicated algorithm and heuristics; (ii) **predict** the environment of French neighbourhoods using well-know prediction algorithms; and (iii) develop a **framework to run and compare** prediction algorithms.

Internship: comparing and recommending neighbourhoods with VizLiris May - July 2018
LIRIS *Villeurbanne (FR)*

To facilitate the comparison and recommendation of neighbourhoods in France, we (i) **integrate cartographic and INSEE** data; (ii) **extract high-level indicators** from INSEE data; (iii) develop a Web interface for both **predicting similar neighbourhoods and clustering them**.

Scientific publications and softwares

All my publications are available on [my ORCID](#) and they sum to **15 publications**:

- 3 journals (1 Q1, 1 Q4, 1 JOSS)
- 5 international publications (2 rank A, 1 rank B, 2 rank C)
- 2 national publications
- 2 international workshops (2 rank A*)
- 3 demonstrations (1 rank A, 1 rank B, 1 national)

They led to **7 research softwares**: [BETTER](#) (restricted access), [Abstra](#) (open-source), [PathWays](#) (open-source), [ConnectionStudio](#) (open-source), [Predihood](#) (open-source), [GeoAlign](#) (open-source), and [VizLIRIS](#) (open-source).

Education

- PhD degree, Computer science track** Jan. 2021 - March 2024
Institut Polytechnique de Paris and Inria Saclay Palaiseau (FR)
- Computer Science Master degree, Artificial Intelligence track** 2018 - 2020
Université Claude Bernard Lyon I Villeurbanne (FR)
- Computer Science Bachelor degree** 2015 - 2018
Université Claude Bernard Lyon I Villeurbanne (FR)

Professional service

- Teaching** 2022-2023
- Intern co-supervisor: 3 third-year Polytechnique students (winters 2023 and 2022), 1 Polytechnique Bachelor student (summer 2023), 1 Master student (summer 2022)
 - Teaching Assistant: Machine Learning (spring 2023), Algorithms (fall 2022), Object-Oriented Programming (spring 2022)
- Review** 2021 - now
- Journal: reviewer for PLOS ONE in 2024, BMC Informatics in 2024, Scientific Reports in 2024
 - Conference: external reviewer for ICDE 2025, CIDR 2023, EDBT 2023, ICWE 2021
- Talks** 2022 - now
- From data to journalism (international highschool of Palaiseau - 2024)
 - Artificial Intelligence: a tool for journalism (French media development agency - 2023)
 - Data integration research: the case of ConnectionLens (young female scientists meeting - 2022)
- Other services** 2021 - now
- Co-lead the SCOUT action of the DEI initiative in the DB research community (2023-now)
 - Manage the CEDAR team seminars (2021-2024)
 - Co-develop the software to manage Polytechnique students internships (2021)

Skills

Programming languages	Java, Python, Bash, Prolog, C/C++, PHP
Frameworks	Scikit-learn, Flask, Bootstrap, Spring, D3.js,
Web	HTML, CSS, JavaScript
Databases	MySQL, PostgreSQL, MongoDB
Tools	Git, Shell, Maven, JMerise, UMLet
Languages	French (native), English (professional)
Soft skills	dynamism, teamwork, pedagogy

Leisures

- Puzzles
- The Computer Science challenge “Nuit de l’Info” as leader of my team and Web developer