

# Nelly Barret

Post-doctoral researcher at Politecnico di Milano

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

## Research experience

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**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

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All my publications are on [my ORCID](#). They sum to **16 publications**:

- 3 journals: 1 Q1, 1 Q4, 1 JOSS
- 3 research papers: 2 rank A, 1 rank C
- 2 workshop papers: 2 rank A\*
- 4 demonstrations: 2 rank A, 1 rank B, 1 rank national
- 3 short papers: 1 rank B, 2 rank national
- 1 PhD paper: 1 rank 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

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### PhD degree, Computer science track

*Institut Polytechnique de Paris and Inria Saclay*

Jan. 2021 - March 2024

*Palaiseau (FR)*

### Computer Science Master degree, Artificial Intelligence track

*Université Claude Bernard Lyon I*

2018 - 2020

*Villeurbanne (FR)*

### Computer Science Bachelor degree

*Université Claude Bernard Lyon I*

2015 - 2018

*Villeurbanne (FR)*

## Professional service

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### 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
- 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

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### 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

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