

Emma Redor

MASTER STUDENT · COMPUTER SCIENCE

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Passionate about applying computer science to advance our understanding of the human body. Strongly committed to the ethical handling of healthcare data and ensuring research reproducibility. Aspiring to collaborate with healthcare professionals to develop accurate and precise diagnostic tools.

Education

École Normale Supérieure (ENS) Rennes

Rennes

ENS DIPLOMA (RESEARCH MAJOR, INTERNATIONAL MINOR)

2023 - 2026

- The ENS Rennes 4-year diploma highlights the value of a training program specific to the school. It emphasizes research and extra-curriculum activities. I entered the program directly in second year.
- 2nd year (2023 - 2024): first year of Master in fundamental Computer Science at ENS Rennes. Curriculum: *HPC, Machine learning, assisted proofs with Coq, bio-informatics, computer graphics...*
- 3rd year (2024 - 2025): Research internships
- 4th year (2025 - 2026): second year of Master

Université de Rennes

Rennes

B.SC. COMPUTER SCIENCE

2023

- Note: I enrolled at ENS Rennes in 2021–2022 but had to withdraw due to health reasons. To better manage my health, I resumed and completed my Bachelor's degree at Université de Rennes in 2022–2023. I was unable to attend the latter half of the second semester, which impacted my final grades.

Lycée Assomption

Rennes

BACCALAURÉAT S

2019

- French high school diploma
- Specialized in life & earth science

Research Experience

RESEARCH INTERNSHIP (JANUARY - JUNE 2025) | MAX PLANCK INSTITUTE FOR BIOCHEMISTRY, GERMANY

Internship in [Karsten Borgwardt](#)'s team

Extraction of time-series data from the MIMIC-IV dataset

Developing a model to infer clinician treatment decisions from patient vital signs (e.g., heart rate, oxygen saturation)

Technology: Python, PyTorch, Lightning, Hydra, R

RESEARCH INTERNSHIP (SEPTEMBER - DECEMBER 2024) | CRNL, FRANCE

Internship in the [COPHY team](#), supervised by Jérémie Mattout, Emmanuel Maby and Alexandre Mollaret

Showed that the quality of brain signals captured with EEG doesn't decreased when the subject is playing a game with a VR headset rather than in front of a computer.

Technology: Python, mne

RESEARCH INTERNSHIP (SUMMER 2024) | GÖTTINGEN, GERMANY

Internship in [Fabian Sinz](#)'s team

Demonstrated the feasibility of developing a U-Net model for segmenting cranial bones in monkey MRI images

Intersection-over-union score **improved by 20% compared to state of the art**

Technology: Python, PyTorch, numpy, Docker

PART-TIME RESEARCH INTERNSHIP (OCTOBER 2023 - MAY 2024) | INRIA RENNES, FRANCE

Part-time internship in the EMPENN team under [Camille Maumet](#) and [Fanny Dégeilh](#)'s supervision

Showed the importance of the similarity in parameters used during data harmonization and statistical analysis using the Latent Change Score model

Technology: R, lme4 package

RESEARCH INTERNSHIP (SUMMER 2023) | INRIA RENNES, FRANCE

Internship in the EMPENN team under [Fanny Dégeilh](#)'s supervision

Bibliographical work on various brain atlases for infants (0-5yo)

Bibliographical work on the various MRI brain segmentation tools

Tested selected brain MRI segmentation programs

RESEARCH INTERNSHIP (SUMMER 2022) | INRIA RENNES, FRANCE

Internship in the GENSCALE team under [Claire Lemaitre](#)'s supervision Evaluated the contribution of a new sequencing technology (linked-reads) for the quantification of genomic variants, compared to other technologies (short and long reads)

Analyzed whether the long-distance signal in these data can distinguish different versions of the variants represented in a sequence graph

Technology: Python

Certifications

TOEIC: 990/990 (delivered in April 2024)

CITI Data or Specimens Only Research

Extracurricular

SINGER IN SCHOOL'S ROCK BAND (2023 - 2024)

Weekly 2-hour rehearsal on Saturdays morning

Performed at the ENS Rennes' 10 year anniversary and the school Christmas gala

ACTRESS IN SCHOOL MUSICAL (2021 - 2022)

Biweekly rehearsal focused on acting and singing

Performed the play in front of 200 persons in May 2022 with the 8 other actors

Technical

Programming Languages: Python, R

Python libraries: PyTorch, numpy, pandas, Lightning, Hydra