



ANTONI BERTOLIN MONFERRER

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[Personal page](#)

[LinkedIn profile](#)

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SUMMARY

PhD student in Computational Neuroscience and research assistant at the University Hospital Bonn, with extensive experience in neural simulations, C++ development, and computational modeling, and strong knowledge in neuroscience, machine learning, and high-performance computing. Seeking research or development positions in C/C++ software development.

RELEVANT PROFESSIONAL EXPERIENCE

POSITIONS

Scientific Researcher

University Hospital Bonn

University Medicine of JGU Mainz

Sept. 2022 – Aug. 2025

Sept. 2022 – Aug. 2023, Germany

Sept. 2023 – Aug. 2025, Germany

- Optimization, debugging, and refactoring of complex C++ codebase for maximum efficiency and maintainability.
- Design, implementation, and integration of core functions and a new framework in C++.
- Comprehensive testing of all new C++ functions before integration.
- Development of custom C++ frameworks for neural simulations.

Lecturer for Python Programming in M. Sc. Neuroscience Course

University of Bonn

May 2024, May 2025

Bonn, Germany

- Preparation of the teaching materials for Python fundamentals.
- Teaching of Python fundamentals.
- Assistance and guidance to students.

Research Assistant

University of Edinburgh

Sept. 2020 – Aug. 2021

Edinburgh, United Kingdom

- Conducting data analyses for Neuropixel recording tagging.
- Building data pipelines and analysis tools for human classification problems.
- Development of neural network-based decoders for Neuropixel data analysis.

Research Assistant

University of Barcelona

June 2018 – Aug. 2020

Barcelona, Spain

- Data analysis of protein and experimental data.
- Design and performance of receptor binding experiments.
- Teaching and guidance to students.

PROFESSIONAL PROJECTS

Development of Synaptic Plasticity Models | Python

University of Bonn

May. 2024 – Aug. 2025

Integration of Plasticity Model Framework into SNNs | C++

University of Mainz

Sept. 2023 – Aug. 2024

[TchuSNNNet](#)

Refactoring of Spiking Neural Networks Codebase | C++

University of Mainz

Sept. 2022 – Aug. 2023

[TchuSNNNet](#)

ACADEMIC PROJECTS

Analysis of Genetic Covariance and Evolution of Asynchronous Senescence | R Sept. 2021 – Aug. 2022
University of Edinburgh

Analysis of Neural Recordings during Behavioral Tasks with ANNs | *Python* Jan. 2021– Aug. 2021
University of Edinburgh

Analysis of Professional Neuropixel Data Tagging | *Python* Sept. 2020 – Dec. 2020
University of Edinburgh

EDUCATION

Doctoral Thesis | *Computational Neuroscience* Sept. 2022 – Aug. 2025
University of Bonn Bonn, Germany

M. Sc. | *Evolutionary Genetics* Sept. 2021 – Aug. 2022
University of Edinburgh Edinburgh, United Kingdom

M. Sc. | *Integrative Neurosciences* Sept. 2020 – Aug. 2021
University of Edinburgh Edinburgh, United Kingdom

B. Sc. | *Biochemistry* Sept. 2016 – Aug. 2020
University of Barcelona Barcelona, Spain

LANGUAGES

Spanish (Native), **Catalan** (Native), **English** (C2), **German** (B1), **French** (A1)

COMPUTER SKILLS

Programming Languages: C++, C, Python, Julia, R, Lua, Bash, Zsh, Powershell, MATLAB, Mathematica, HTML, CSS

Document Creation: Latex, Libreoffice, Markdown, Microsoft Office suite

Graphic Design: Inkscape, Graphpad Prism, Matplotlib, Seaborn

Version Control: Git

VMs and containers: Docker, LXC/LXD, libvirt, VirtualBox, Linux namespaces and cgroups

CI/CD: GitHub Workflows & Actions, Jenkins

Embedded systems: Raspberry 4B, ATmega328P, STM32, C++, PlatformIO

Databases: SQLite, MongoDB

OS: Windows, Linux

Other: CMake, Make, SLURM, OpenSSH, GraFit, Phy, SPSS, Doxygen, STL, OOP, Qt

PROJECT PORTFOLIO

SNN simulation software | C++

TchuSNNet

Ubuntu version fetcher | C++

UbuntuVersionFetcher

ENIGMA Machine Emulator | *Python*

denigma

Jaipur Game Emulator and Julia Library | C

JaipurEmulator

C Mutex Interface Library | C

C_the_mutex

Memory Allocator Library | C

aberrloc

HONORS AND AWARDS

Gold (1st) in Regional Biology Olympiad

Price for being 1st in the competition

2016

Spain

Gold (1st) in Regional Chemistry Olympiad

Price for being 1st in the competition

2016

Spain

Bronze (8th) in National Chemistry Olympiad

Price from being from 7th to 10th in the competition

2016

Spain

Silver (8th) in National Biology Olympiad

Price from being from 5th to 8th in the competition

2016

Spain

Silver (10th) in Iberoamerican Biology Olympiad

Price from being from 7th to 14th in the competition

2016

Brazil

Saturday 17th May, 2025

[Bonn, Germany]



Signature