

# Leonardo Agueci

✉ leonardo.agueci@ens.psl.eu



## EDUCATION

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### École Normale Supérieure

PhD in Computational Neuroscience, Advisor: Prof. Alex Cayco Gajic

Paris, France

2021 - 2025

Thesis: *The Cerebellum as an error approximator: distributed learning in multi-region recurrent neural networks*

### Sorbonne Université

M2 in Theoretical Physics - Complex systems

Paris, France

2018 - 2019

### Politecnico di Torino

MSc in Physics of Complex Systems

Turin, Italy

2017 - 2019

Thesis: *Study of experience-related effective plasticity in prefrontal cortex using Restricted Boltzmann Machines.*

### Politecnico di Torino

BSc in Physical Engineering

Turin, Italy

2014 - 2018

## PROFESSIONAL EXPERIENCE

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### École Normale Supérieure

Postdoc Researcher, Group for Neural Theory, Advisor: Prof. N. Alex Cayco Gajic

Paris, France

Nov 2025 - Present

### Politecnico di Torino

Research Assistant, Computer Science Department, Advisor: Prof. Andrea Calimera

Turin, Italy

Jan 2020 - Aug 2021

- Machine learning optimization and pruning algorithms for neural network compression.
- Neural network modeling and data analysis for predictive maintenance. Collaboration within the *MADEin4* and *R3-PowerUP* European Consortia.

### National Metrology Institute of Italy

Research Intern

Turin, Italy

Mar - Jul 2017

- Studied the physics of Superconducting Quantum Interface Single Electron Transistor. Developed numerical models for device behavior using master equation solutions.

## TRAINING COURSES

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### Mathematical Methods in Computational Neuroscience

Summer school, Fred Kavli Science Center

Eresfjord, Norway

Jul 19 - Aug 5, 2022

Intensive training in mathematical and physical methods for computational neuroscience research, covering techniques from mathematics, physics, and engineering for analyzing neural systems.

### Machine Learning for Neuroscience

CAJAL summer school, Champalimaud Centre for the Unknown

Lisbon, Portugal

Jul 9-29, 2023

Hands-on introduction to artificial intelligence and machine learning for data acquisition, analysis and modeling of brain activity and behavior. Covered supervised/unsupervised learning, time series analysis, and reinforcement learning.

## Spring College on the Physics of Complex Systems

4-week intensive programme, ICTP

Trieste, Italy  
Feb - Mar 2019

Selected topics at the forefront of research in physics, biology, engineering, and economics, focusing on collective behavior in systems with many interacting degrees of freedom.

## Visiting Student

First semester MSc coursework, ICTP & SISSA

Trieste, Italy  
Sep 2017 - Feb 2018

Attended graduate-level courses in theoretical physics and complex systems as part of the joint PCS master's program.

## TEACHING EXPERIENCE

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### PSL-Qlife Winter School in Quantitative Biology

Course Instructor, Dimensionality Reduction Techniques

Paris, France  
Mar 25-29, 2024

Taught dimensionality reduction methods as part of the "Learning and Plasticity in Neuronal Networks" winter school program.

### École Normale Supérieure

Teaching Assistant, Data Science

Paris, France  
2022-23 & 2023-24

Master in Cognitive Science program (Cogmaster), PSL & Université Paris Descartes.  
Assisted Prof. Alex Cayco Gajic with 26h of practical sessions

### YouKnow Education

Private Tutor

Mazara del Vallo, Italy  
Jan 2021 - Aug 2021

Individual and group tutoring in mathematics, physics, and sciences for high school and undergraduate students.

## CONFERENCES

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- Paris Ile-de-France Neural Theory Symposium (PINTS), Paris, France (Poster) Dec 2025
- Symposium "Neuro-cybernetics at scale" 2025, Lisbon, Portugal (Talk) Oct 2025
- CNS 2025 Annual meeting, Florence, Italy (Talk at the workshop "Linking structure, dynamics, and function in neuronal networks: old challenges and new directions") Jul 2025
- Paris Ile-de-France Neural Theory Symposium (PINTS), Paris, France (Poster) Dec 2024
- Bernstein Conference 2024, Frankfurt, Germany (Poster) Sep 2024
- Neural Control of Movements Annual meeting, Dubrovnik, Croatia (Poster) Apr 2024
- COSYNE Conference 2024, Lisbon, Portugal (Poster) Feb 2024
- Bernstein Conference 2023, Berlin, Germany (Poster) Sep 2023
- Bernstein Conference 2023, Berlin, Germany (organizer of the workshop "Biologically plausible learning in artificial neural networks") Sep 2023
- Paris Ile-de-France Neural Theory Symposium (PINTS), Paris, France (Poster) Dec 2022
- FENS Forum 2022, Paris, France (Poster) Jul 2022