

Loris Mendolia

PHD CANDIDATE IN NEUROMORPHIC ENGINEERING · BIOMEDICAL ENGINEER

✉ lmendolia@uliege.be | 🏠 lorismendolia.github.io | 🔗 linkedin.com/in/LorisMendolia | 📄 Publications

Education

PhD in Engineering and Technology

University of Liège

Liège, Belgium

Sep 2022 - now

- FRIA Doctoral Research Grantee (F.R.S.-FNRS National Fund for Scientific Research) since October 2023
- Thesis: "Reliable, tunable, and adaptive ultra-low-power neuromorphic architectures using neuromodulation"
- Thesis directors: Alessio Franci, Jean-Michel Redouté. Supervisors: Guillaume Drion, Pierre Sacré

MSc in Biomedical Engineering

University of Liège

Liège, Belgium

Sep 2020 - Sep 2022

- Summa cum laude with Congratulations from the Jury
- Master thesis: "Electrical impedance tomography for external wound monitoring: measurements, signal processing and image reconstruction", Supervisor: Jean-Michel Redouté
- Outstanding Master Thesis Award - Faculty of Applied Sciences

BSc in Engineering

University of Liège

Liège, Belgium

Sep 2017 - Jun 2020

- Magna cum laude
- Fernand Pisart Scholarship laureate

Experience

Teaching Assistant

Faculty of Applied Sciences, University of Liège

Liège, Belgium

Sep 2022 - now

- Practical lectures and SPICE/Cadence simulation sessions in a neuromorphic signal processing course for MSc students in electrical engineering.
- Laboratory sessions in a bioelectronics course for MSc students in biomedical and electrical engineering.
- FPGA programming project supervision in a microelectronics course for MSc students in electrical engineering.

Engineering intern

KapLab by CHU Liège

Esneux, Belgium

Apr 2022 - May 2022

- CAD design, 3D printing and electronics work for patient-specific technical assistance devices (e.g. development of a motorized cup holding arm prototype for people lacking motor skills to hydrate themselves).
- Digitalization of pressure measurement devices for physiotherapy.
- Handigaming devices programming and adaptation.
- Close collaboration with patients and therapists.

Student instructor

Faculty of Applied Sciences, University of Liège

Liège, Belgium

Sep 2019 - Jan 2022

- Rudiments of thermodynamics, Introduction to numerical methods and project, Additional information technology, Elements of statistics, Elements of probability calculus.

Achievements

2024	FRIA Doctoral Grant Renewal National Fund for Scientific Research (F.R.S.-FNRS)	Belgium
2023	Fund for Research Training in Industry and Agriculture (FRIA) Doctoral Grant National Fund for Scientific Research (F.R.S.-FNRS)	Belgium
2022	Outstanding Master Thesis Award Faculty of Applied Sciences, University of Liège	Belgium
2017	Fernand Pisart Scholarship Faculty of Applied Sciences, University of Liège	Belgium

Research

RESEARCH VISITS

Apr 2026	Yoeri van de Burgt, Eindhoven University of Technology (Apr 10, May 22, Jun 8)	Eindhoven, Netherlands
Jul 2025	Chiara Bartolozzi, Istituto Italiano di Tecnologia (Jul 7 - 11)	Genoa, Italy
Oct 2023	Elisabetta Chicca, Bio-Inspired Circuits and Systems (Oct 3 - 14)	Groningen, Netherlands
Feb 2023	Giacomo Indiveri, Institute of Neuroinformatics (Jan 29 - Feb 5)	Zurich, Switzerland

EVENTS

July 2026	International Conference on Neuromorphic Computing and Engineering (Jun 28 - Jul 2)	Aachen, Germany
May 2026	CapoCaccia Cognitive Neuromorphic Engineering Workshop (Apr 26 - May 10)	Alghero, Italy
Mar 2026	Benelux Meeting on Systems and Control (Mar 24 - 26)	Lommel, Belgium
Jun 2024	International Conference on Neuromorphic Computing and Engineering (Jun 3 - 6)	Aachen, Germany
May 2024	CapoCaccia Cognitive Neuromorphic Engineering Workshop (Apr 28 - May 12)	Alghero, Italy
Mar 2024	Benelux Meeting on Systems and Control (Mar 26 - 28)	Blankenberge, Belgium
Aug 2023	SCIoI & ISAB Summer School (Aug 21 - 25)	Berlin, Germany
Apr 2023	SpikyControl Workshop, KU Leuven (Apr 26, 27)	Leuven, Belgium

MASTER THESIS MENTORING

2026	Victoria Filée	Neuromodulation Controller Enabling Robustness to Transistor Variability in Subthreshold Silicon Neurons
2025	Nicolas Giourgias	Fast and Flexible Decision Making using CMOS Hardware
2024	Maël Dengis	Design of an integrated neuromodulable current-mode neuron implemented with a flexible 600nm process
2024	Pierre Graindorge	Achieving ultra-slow timescales in neuromorphic circuits - Application to neural bursting

MISCELLANEOUS

Mar 2026 **Television** Labo4: Le cerveau humain (Qu4tre)

Publications

PREPRINTS

A Neuromodulable Current-Mode Silicon Neuron for Robust and Adaptive Neuromorphic Systems

Loris Mendolia, Chenxi Wen, Elisabetta Chicca, Giacomo Indiveri, Rodolphe Sepulchre, Jean-Michel Redouté, Alessio Franci
2025

Hardware-Software Co-Design of Scalable, Energy-Efficient Analog Recurrent Computations

Arthur Fyon, Julien Brandoit, Loris Mendolia, Damien Ernst, Jean-Michel Redouté, Guillaume Drion
2026

A Fully Tunable Ultra-Low Power Current-Mode Memory Cell in Standard CMOS Technology

Arthur Fyon*, Loris Mendolia*, Jean-Michel Redouté, Alessio Franci, Guillaume Drion
2026

PATENTS

Arthur Fyon, Loris Mendolia, Guillaume Drion, Alessio Franci. *Current-mode switching circuits and analog computational systems*. European patent application EP26175243.0. Claims priority to U.S. provisional patent application No. 63/897,109 filed on 2025-10-10. Apr. 28, 2026.

ORAL PRESENTATIONS

Revisiting mismatch in neuromorphic neurons through input dynamics

Loris Mendolia, Alessio Franci

International Conference on Neuromorphic Computing and Engineering (ICNCE), 2026, Aachen, Germany

Input-driven timing reliability in mismatched neuromorphic neurons

Loris Mendolia, Alessio Franci

45th Benelux Meeting on Systems and Control, 2026, Lommel, Belgium

POSTER PRESENTATIONS

Embodied neuromodulation for neuromorphic rhythmic control

Loris Mendolia*, Christian Fernandez Lorden*, Fulvio Forni, Alessio Franci

International Conference on Neuromorphic Computing and Engineering (ICNCE), 2024, Aachen, Germany

Networks of low-power CMOS neuromorphic neurons with robust neuromodulation capabilities for intelligent and adaptable neuromorphic systems

Loris Mendolia, Jean-Michel Redouté, Alessio Franci

SCIoI & ISAB Summer School 2023: "Embodied Intelligence – Perception and Learning in Nature and Robotics", 2023, Berlin, Germany

References available upon request.