FLAVIO MARTINELLI

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EDUCATION

CURRENTLY	**Ph.D. in Computational Neuroscience**, EPFL, Lausanne (CH) *Advisors: Prof. Wulfram Gerstner & Ph.D. Johanni Brea*	
2020	**M.Sc. in Neuroengineering**, EPFL, Lausanne (CH)	GPA: 5.55/6.00
2017	**B.Eng. in Biomedical Engineering**, Politecnico di Milano (IT)	GPA: 109/110
2014	**Electronics Highschool**, IIS B.Castelli, Brescia (IT)	

WORK EXPERIENCE

2020	**Research Assistant**, LREN lab at university hospital CHUV, Lausanne (CH) *Reinforcement learning modelling of fMRI data*
2019	**R&D Intern**, Logitech, Lausanne (CH) *Neuromorphic computing for speech detection*

SELECTED PUBLICATIONS

2024	"Expand-and-Cluster: Parameter Recovery of Neural Networks" ICML 2024 ***Martinelli, F.***, *Şimşek B., Gerstner W.* & Brea J.**
2024	"Actor-Critic Networks with Analogue Memristors Mimicking Reward-Based Learning" Under review *Portner K.*, Zellweger T.*, **Martinelli, F.**, ..., Offrein B., Gerstner W., Luisier M. & Emboras A.*
2020	"Spiking neural networks trained with backpropagation for low power neuromorphic implementation of voice activity detection" ICAASP 2020 ***Martinelli, F.***, *Dellaferrera G., Mainar P. & Cernak M.*

* equal contribution

HONORS AND AWARDS

2023	**Best Presentation Award**, NeuroLeman Annual Meeting, Villars (CH)
2020	**Mention of Excellence** for final GPA, EPFL, Lausanne (CH)
2014-2017	**High Merits** tuition exemptions, Politecnico di Milano (IT)
2013	**First Place at National Electronics Competition**, Bergamo (IT)

SKILLS

CODING	Python, Julia, MATLAB, C/C++
TOOLS	PyTorch, Git, Shell, Kubernetes
SOFT	Teaching, Project design, Supervision

LANGUAGES

ITALIAN	**Native**
ENGLISH	**Professional**
FRENCH	**Intermediate**

INVITED TALKS

2024   *"From Loss Landscape Geometry to Parameter Recovery"*
Tim Vogels's group, Institute of Science and Technology, Vienna (AT)

"Expand-and-Cluster: Parameter Recovery of Neural Networks"
Jakob Macke's group, Max Planck Institute for Intelligent Systems, Tübingen (DE)

"Expand-and-Cluster: Parameter Recovery of Neural Networks"
Swiss Computational Neuroscience Retreat 2024, Crans-Montana (CH)

2023   *"Expand-and-Cluster: Parameter Recovery of Neural Networks"*
Annual Meeting of the NeuroLeman Network 2023, Villars (CH)

"Expand-and-Cluster: Parameter Recovery of Neural Networks"
Angelika Steger and Joao Sacramento's groups, ETH, Zurich (CH)

CONFERENCE ACTIVITIES

2024   **ICML**: poster, Vienna (AT)
2024   **Youth in High-Dimensions**: poster, Trieste (IT)
2023   **NeuroLeman Meeting**: talk and poster, Villars (CH)
2022-2023   **Bernstein Conference**: poster, Berlin (IT)

TEACHING EXPERIENCE (TA)

2023   **Computational Neuroscience: Neuronal Dynamics**, EPFL master course
2022   **Biological Modelling of Neural Networks**, EPFL master course
2021-2023   **Introduction to Machine Learning for Bioengineers**, EPFL bachelor course

2021-   **Supervisor of Master Students**: R. Palazzo, A. Salvatore, A. Beiser

CONTRIBUTED PUBLICATIONS

2023   "MLPGradientFlow: going with the flow of multilayer perceptrons (and finding minima fast
and accurately)"
ArXiv
*Brea J., **Martinelli, F.**, Şimşek B. & Gerstner W.*

2020   "A Bin Encoding Training of a Spiking Neural Network Based Voice Activity Detection"
ICAASP 2020
*Dellaferrera G., **Martinelli, F.** & Cernak M.*