Christos Sourmpis

*I am a PhD student specialized in the intersection of **neuroscience** and **machine learning**. I am passionate about **working in interdisciplinary teams**. My expertise lies in developing machine learning models to **analyze and interpret complex experimental data**, enabling novel insights in neuroscience.*

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Education

2019–2024 **PhD in Computational Neuroscience**, *EPFL*, Lausanne, Switzerland.

- PhD Advisors: Prof. Wulfram Gerstner and Prof. Carl Petersen
- Data-constrained spiking recurrent neural networks for sensor-to-motor pathways.
- Co-developed experimental data analysis pipelines.

2013–2018 **Diploma in Electrical and Computer Engineering**, *University of Patras*, Patras, Greece.
GPA: *9.13/10*, Ranked first of my year

2017–2017 **Erasmus Exchange Program**, *Graz University of Technology*, Graz, Austria.

Professional experience

2019 **R&D Engineer**, *SynSense - Neuromorphic Hardware Company*, Zurich, Switzerland.
Continued working on the same project with a focus on hardware constraints. Investigated other methods for speech processing, e.g., Self-Organized Map with Tempotron inference.

2018–2019 **Internship**, *SynSense - Neuromorphic Hardware Company*, Zurich, Switzerland.
Research on audio signal to spikes conversion methods (silicon cochlea models). Developed an end-to-end pipeline system for keyword detection using a static spiking neural network reservoir.

Selected publications (see Google Scholar for the full list)

2023 **Sourmpis C**, Petersen CCH, Gerstner W, & Bellec G. Trial matching: capturing variability with data-constrained spiking neural networks. Advances in Neural Information Processing Systems (NeurIPS), 36:74787–74798

2024 Oryshchuk A, **Sourmpis C**, ..., Petersen CCH & Crochet S. Distributed and specific encoding of sensory, motor and decision information in the mouse neocortex during goal-directed behavior. Cell Reports, 43(1).

Distinctions and awards

2019 **Scholarship from the "Limmat Stiftung"**, *Ranked first of class.*

2019 **Scholarship from the "Georgiou & Aggeliki's Skoura Foundation"**, *Ranked first of class*.

2018 **1st place in EESTech Challenge**, *local round in University of Patras*, hackathon challenge on Big Data Analysis.

Languages

Greek	Native	
English	Advanced proficiency	*IELTS 7.5/9 – C1*
German	Basic proficiency	*Goethe Zertifikat B1*

Skills

Languages	Python, Matlab, Java, C/C++
Frameworks	○ Machine Learning: PyTorch, scikit-learn ○ Data Processing and Analysis: NumPy, SciPy, pandas
Software	docker, Git, GitHub, Linux, kubernetes, LaTeX
Social skills	working in an interdisciplinary team, efficient communication, co-organizing events for my doctoral program
General skills	exploring new tools, analytical thinking, problem solving, software optimization and acceleration with GPUs