Edouard Koehn

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EDUCATION

Ecole Polytechnique Fédérale de Lausanne, EPFL	Lausanne, Switzerland
Master of Science MSc in Neuro-X - Ing. neuro-X. EPF	*Feb. 2022 – 2025*
Ecole Polytechnique Fédérale de Lausanne, EPFL	Lausanne, Switzerland
Bachelor of Science BSc in Life Science Engineering	*2017 – 2022*
Sport school, Spiritus Sanctus Brig	Brig, Switzerland
Economics High School Diploma	*2011 – 2017*

RESEARCH EXPERIENCE

Univeristy of California Berkeley, UCB — August 2024 – Present
Master Thesis — *Berkeley, CA, USA*

Neural Systems and Machine Learning Laboratory (NSML)
- Developed Recurrent Neural Networks (RNNs) integrated with biologically inspired connectivity.
- Applied chaos theory to analyze and understand the system's dynamic.
- Used control theory methods to guide the system's dynamics.

École Polytechnique Fédérale de Lausanne, EPFL — 2023 – 2024
Semester Project — *Lausanne, Switzerland*

Mathis Group for Computational Neuroscience and AI
- Deployed transformer-based policies for natural locomotion problems.
- Uncovered the attention and learning mechanisms of the transformer model in the context of locomotion solutions.

Medical Image Processing Laboratory (MIPLAB)
- Developed a new technique to generate individual-centered brain connectomes from diffusion MRI data.
- Applied graph signal processing technics to diffusion MRI data.

EXPERIENCE

Research Intern — Aug. 2023 – Jan. 2024
Genomics and Health Informatics Group - Idiap — *Martigny, Switzerland*
- Applied Convolutional Neural Networks (CNNs) to imaging data for studying cellular morphology in neurodegenerative diseases.
- Evaluated AI explainability techniques for CNNs in the context of bioimaging.

Research Intern — Aug. 2019 – Feb. 2020
R&D Team - Swiss National Ski Federation — *Bern, Switzerland*
- Investigated the use of GNSS technology for performance analysis in winter sports.
- Conducted an empirical study on starting strategies in alpine skiing.

Alpine Ski Racer — 2003 – 2015
Swiss National Ski Federation — *Brig, Switzerland*
- Competed and trained internationally in alpine skiing for over a decade.

VOLUNTEERING

President of the Organizing Committee — September 2021 – April 2024
FIS European Cup — *Jaun, Switzerland*
- Managed and coordinated an international alpine skiing competition
- Organized a two-day event with around 200 volunteers, 100 athletes, and 3,000 spectators

SKILLS

Programming	Python, PyTorch, Matlab, C++, Julia, Huggingface
Field expertise	Data Science, Computer vision, System Neuroscience, Machine Learning, Control Theory
Spoken language	French: native, English: advanced, German: advanced
Interset:	Outdoor sport (climbing, hiking, surfing), Sciences in general