

Education

- EPFL Lausanne - IDIAP, PhD Student** May 2025 – Now
• PhD Student in the Neuro-Symbolic AI group of Prof. Andre Freitas, working for the [M-RATIONAL](#) project.
- UNIL Lausanne, M.A. Philosophy** Sept. 2020 – June 2023
• With 40 credits to catch up. Focus on Philosophy of Science, Kantian Philosophy and Phenomenology.
• Title of master thesis: “Le transcendantal, le physiologique et le computationnel: le predictive processing à partir de Kant et de Helmholtz”.
- Humboldt University Berlin, Exchange Semester in Philosophy** April 2022 – July 2022
• Exchange Semester in Philosophy at Humboldt University Berlin.
- UNIL Lausanne, Propedeutical Year, Philosophy, Sociology and French** Sept. 2019 – Aug. 2020
• Propedeutic year in Philosophy, Sociology and Modern French.
- ETH Zurich, M.Sc. Computational Sciences and Engineering** Sept. 2016 – Jan. 2019
• Research-centered program with a focus on Machine Learning, NLP, Computer Vision and HPC.
• Title of master thesis: “Story understanding and story generation with deep learning”.
- EPFL Lausanne, B.Sc. Life Sciences and Technologies** Sept. 2013 – July 2016
• Engineering program with Mathematics, Physics and Computer Science as well as Biology and Chemistry.

Research experience

- Machine Learning Alignment & Theory Scholars (MATS), Visiting Scholar** Jan. 2026 – Mar. 2026
• Selected as a MATS Scholar, working under the supervision of Patrick Butlin (in Berkeley).
- University of Bern, Doctoral Researcher in Philosophy of AI** July 2023 – Dec. 2024
• Worked on personal research in the field of philosophy of deep learning under the supervision of Prof. Claus Beisbart.
- UNIL BCUL, Computer Science Engineer, 60%** Oct. 2022 – Feb. 2023
• Designed and implemented software to deal with UNIL’s digital libraries; collaborated with EPFL on project Impresso.
- EPFL LSIR, Research Engineer, 50%** Sept. 2019 – Aug. 2021
• Worked in a research team to implement and deploy multimodal-LLM-based video retrieval systems.
- Logitech Lausanne, Scientific advisor, 10%** Sept. 2019 – April 2023
• Consulting for internship and master thesis projects in the CTO-AI department in deep learning applied audio.
- Logitech Lausanne, Research Engineering Intern** Feb. 2019 – July 2019
• Researched product-feasible deep learning solutions for audio-related tasks.
- Disney Research Zurich (DRZ), Master Thesis and Semester Project** March 2018 – Feb. 2019
• Conducted research on story understanding and generation using deep learning approaches.
- ETHZ Computer Vision and Geometry Group (CVG), Research Assistant, 20%** Oct. 2017 – Sept 2018
• Developed a mixed reality application for the HoloLens from an idea to a working first version.

Teaching experience

- University of Bern, Assistant lecturer, Philosophy of AI** Oct. 2024 – Dec. 2024
• Co-teaching two CAS courses of Advanced Machine Learning, delivering one third of the lectures:
• Philosophy and Ethics of Extended Cognition and Artificial Intelligence.
• NLP: Philosophical and Ethical Aspects.
- UNIL, Tutor, Philosophy of the Mind** Feb. 2023 – Jun. 2023
• Tutor for an introductory course to contemporary philosophy of mind, supporting first-year university students.
- UNIL, Tutor, General and Systematic Philosophy** Sept. 2021 – Jan. 2022
• Tutor for an introductory course to phenomenology, supporting first-year university students.
• Designed and organized three philosophy methodology workshops.

Publications

Publications in Philosophy:

- Matthieu Queloz, [Pierre Beckmann](#), "Why We Care About Understanding: Competence through Predictive Compression", *PhilPapers preprint*, 2025.
- [Pierre Beckmann](#), Matthieu Queloz, "Mechanistic Indicators of Understanding in Large Language Models", *arxiv* 2025 [[Paper](#)]
- [Pierre Beckmann](#), "New Horizons in Machine Understanding: Explanatory and Objectual Understanding in Deep Learning Video Generation Models", *Synthese* 2025 [[Paper](#)]
- [Pierre Beckmann](#), Guillaume Köstner, Ines Hipolito, "An alternative to cognitivism: computational phenomenology and deep learning", *Minds and Machines* 2023 [[Paper](#)]

Publications in Neuro-Symbolic AI:

- Lei Xu*, [Pierre Beckmann](#)*, Marco Valentino, André Freitas, "Adaptive LLM-Symbolic Reasoning via Dynamic Logical Solver Composition", *EACL*, 2026 [[Paper](#)]

Publications in Deep Learning for Speech:

- [Pierre Beckmann](#)*, Mikolaj Kegler*, Milos Cernak, "Deep speech inpainting of time-frequency masks", *Interspeech* 2020 [[Paper](#)][[Demo](#)]
- [Pierre Beckmann](#)*, Mikolaj Kegler*, Milos Cernak, "Word-Level Embeddings for Cross-Task Transfer Learning in Speech Processing", *EUSIPCO* 2021 [[Paper](#)][[Code](#)]
- Neil Scheidwasser-Clow, Mikolaj Kegler, [Pierre Beckmann](#), Milos Cernak, "SERAB: A multi-lingual benchmark for speech emotion recognition", *ICASSP* 2021 [[Paper](#)][[Code](#)]
- Gasser Elbanna, Alice Biryukov, Neil Scheidwasser-Clow, Lara Orlandic, Pablo Mainar, Mikolaj Kegler, [Pierre Beckmann](#), Milos Cernak, "Hybrid Handcrafted and Learnable Audio Representation for Analysis of Speech Under Cognitive and Physical Load", *Interspeech* 2022 [[Paper](#)][[Code](#)]
- Gasser Elbanna, Neil Scheidwasser-Clow, Mikolaj Kegler, [Pierre Beckmann](#), Karl El Hajal, Milos Cernak, "Byol-s: Learning self-supervised speech representations by bootstrapping", 2023, PMLR, 3rd place in [HEAR benchmark](#) [[Paper](#)][[Code](#)]

Contributions to Course Books:

- Contributed to three chapters of the course book *Neural Networks for Cognitive Sciences*, co-written with Prof. Jeff Yoshimi from University of California Merced, 2025:
 - History of Neural Networks
 - Convolutional Neural Networks
 - Transformer Architecture and LLMs

Peer Reviews:

- Ubiquity Press, 2025: published as *Understanding Conversational AI: Philosophy, Ethics, and Social Impact of Large Language Models*.
- Knowledge in Society, Springer Nature, 2023.

Talks

- January, 2026. *Do LLMs understand? A mechanistic perspective*. Invited talk, CIS Brownbag Speaker Series, University of California, Merced, USA.
- November, 2025. *Why we care about understanding: competence via predictive compression*. Philosophy of science colloquium, Universit of Bern, Switzerland.
- October, 2025. *Information recall in deep learning: beyond the feature combination paradigm*. [6th Conference on "Philosophy of Artificial Intelligence" \(PhAI 2025\)](#), Vrije Universiteit Amsterdam, Netherlands.
- February, 2025. *Computational phenomenology and deep learning. Calculating Experience?* Seminar, St Catherine's College, Oxford, UK.
- November, 2024. *Les neurosciences computationnelles à l'épreuve de la méthode transcendantale*. Conference series for the 300 years of Kant, UNIL, Lausanne, Switzerland.
- October, 2024. *Could deep learning video generation models understand the physical world? A philosophical perspective*. Talk at IDIAP, EPFL, Switzerland.
- November, 2022. *Computational phenomenology and deep learning*. Conference series on AI and consciousness, UNIL, Switzerland.

Additional information

- **Languages:** French (Native), German (Native), English (Proficient).
- **Programming skills:**
 - Programming languages: Python, C++, C, C#, Matlab, R, Bash/UNIX, ROS.
 - Deep learning: Tensorflow, PyTorch, Keras, Mlflow.
 - High Performance Computing: OpenMP, MPI, Vectorization, CUDA.
- **Employments in scientific mediation:**
 - Scientific mediator at EPFL (2021-2023).
 - Scientific reporter at simplyscience.ch (2021-2022).
- **Associations:**
 - Committee member of the [Groupe Vaudois de Philosophie](#) (2024-Now).
 - Vice-president of ORPHI, the association of philosophy students of UNIL (2022-2023).
- **Grants:**
 - AI Safety Support, 2026: stipend of USD 14'400 supporting participation in the MATS program (Jan.–Mar. 2026).
 - University of Bern, 2023: seed funding of 10'000 CHF supporting a research period (Jul.–Sept. 2023).