Simon Guiroy

I am currently a PhD candidate in Deep Learning at MILA, supervised by Prof. Chris Pal and co-supervised by Prof. Sarath Chandar. My research include Out-of-Distribution Generalization, Reasoning, Transfer Learning, Few-Shot Learning, Self-Supervised Learning.

Education

PhD candidate in Deep Learning - Computer Science (expected graduation : Dec. 2025)
Mila - University of Montreal (GPA: 4.3/4.3)

MSc. in Deep Learning - Computer Science
Mila - University of Montreal, 2019 (GPA: 4.0/4.3)

B.Eng in Electrical Engineering
Polytechnique Montreal (one year at Technical University of Madrid), 2016

Engineering Physics (two years, Bachelor's degree)
Polytechnique Montreal, 2011 - 2013

Publications

- *Neural Coherence*. **Simon Guiroy**, Sarath Chandar, Christopher Pal, Mats Leon Richter. Under review.
- *Improving the Generalization of Vision Foundation Models to Target Domains*. **Simon Guiroy**, Mats Leon Richter, Sarath Chandar, Christopher Pal. Pre-print available soon on ArXiv.
- *Improving Meta-Learning Generalization with Activation-Based Early-Stopping*. **Simon Guiroy**, Christopher Pal, Gonçalo Mordido, Sarath Chandar. Proceedings of The 1st Conference on Lifelong Learning Agents, PMLR. (paper) (video)
- *Scaling Laws for the Few-Shot Adaptation of Pre-trained Image Classifiers*. Gabriele Prato, **Simon Guiroy**, Ethan Caballero, Irina Rish, Sarath Chandar. ICML Workshop: Uncertainty & Robustness in Deep Learning. (paper)
- *Towards an Unsupervised Method for Model Selection in Few-Shot Learning*. **Simon Guiroy**, Vikas Verma, Christopher Pal. ICML 2020 : 4th Lifelong Machine Learning Workshop (paper) (video)
- *Towards Understanding Generalization in Gradient-Based Meta-Learning*. **Simon Guiroy**, Vikas Verma, Christopher Pal. ICML 2019 Workshop: Understanding and Improving Generalization in Deep Learning. (paper)
- *On the reproducibility of gradient-based Meta-Reinforcement Learning baselines*. Tristan Deleu, **Simon Guiroy**, Seyedarian Hosseini. ICML 2018 Workshop: Reproducibility in ML. (paper)
- *Application of the Kaldi toolkit for continuous speech recognition using Hidden-Markov Models and Deep Neural Networks*. **Simon Guiroy**, Ricardo de Cordoba, and Amelia Villegas. Proc. of Iberspeech 2016, pp. 187-196. November 2016. Lisbon, Portugal (paper)

Coding languages and frameworks

Python, C/C++, PyTorch, Tensorflow, Matlab, Android development, Linux, Raspberry Pi, VHDL, Java.

Work Experience

2024 | **Student Researcher**, Google DeepMind

2017 | **Software Developer**, Chaac Technologies

2015 | **R&D Engineer intern**, OrtoPed

2014 | **Embedded Software Tester intern**, CS Communication et Systèmes Canada

Teaching Experience

Teaching assistant, "Artificial intelligence: probabilistic and learning techniques", Polytechnique Montreal, 2020.

Programming teacher, "Introduction to Python programming", MISE Research Program, Ghana, Summer 2018. Designed and taught the course as a preparation for machine learning research projects, for selected high school students.

Invited talks & Symposium posters

Google Brain Montreal (2019); Mila Reading Group on Meta-Learning (2019); Montreal AI Symposium (2022); NSERC COHESA (2022); CRL Symposium (2022, 2023); Mila Reading Group on Computer Vision (2023)

Conference committees

2022 | Program Committee. First Conference on Lifelong Learning Agents

2020 | Program Committee. 4th Lifelong Learning Workshop at ICML 2020

Engineering projects

Recognizing Violent Human Actions in Video with Deep Learning, 2018

Extracting Information using Ocular Commands and Augmented Reality, 2015

Organizing and sociopolitical experience

- Founder/Coordinator/Spokesperson, FÉDAC (2021 - Present).
- Founder/Coordinator/Spokesperson, Arrêtons GNL (2020 - 2021).

Founding and leading a national coalition of student unions, regrouping around 350 000 people and more than 50 organizations, through a sociopolitical campaign on climate action.

Experience involved : Research and Analysis; Funding; Team management; Government relations; Political Strategy; Media and Communications; Coordination with civil society groups; Mobilization; Logistics; Design of online platforms for citizen actions.

Press review (non exhaustive): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 11 12 13, 14, 15, 16, 17.