

Simon GUIROY

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LANGUAGES: French (native), English (bilingual), Spanish (professional fluency), Arabic (intermediate)

I am currently a first year PhD student at MILA, supervised by Prof. Chris Pal and co-supervised by Prof. Sarath Chandar. My main research interests are Deep Learning and the wide field of "Learning to Learn".

EDUCATION

PhD Student in Deep Learning - Computer Science (first year)

Mila - University of Montreal

MSc. in Deep Learning - Computer Science

Mila - University of Montreal, 2019

Bachelor of Electrical Engineering, Polytechnique Montreal, 2016

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

PUBLICATIONS

- Towards Understanding Generalization in Gradient-Based Meta-Learning. **Simon Guiroy**, Vikas Verma, Christopher Pal. ICML 2019 Workshop: Understanding and Improving Generalization in Deep Learning. <https://arxiv.org/abs/1907.07287>
- On the reproducibility of gradient-based Meta-Reinforcement Learning baselines. Tristan Deleu, **Simon Guiroy**, Seyedarian Hosseini. ICML 2018 Workshot: Reproducibility in ML. <https://openreview.net/forum?id=HJ1f978s17>
- 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

WORK EXPERIENCE

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|------|---|
| 2017 | Software Developer at CHAAC TECHNOLOGIES, <i>Professional</i>
Development of an Android application, involving geographic information systems, SQL database design and management, Java and Xml programming. Participation in decisions regarding the software architecture, producing documentation for an R&D project involving photogrammetry, drones and virtual reality. Also involved Agile methodology, MVC design pattern, web programming (Javascript, PHP), Google Maps API, data management. |
| 2015 | Embedded Software Developer at ORTOPED, <i>Intern</i>
Working on the R&D for a computer vision based, biometric hand measurement system, on the aspects of software development in an embedded Linux environment, using languages such as C++ (OpenCV), Python and Bash, as well as electronic circuit design, microcontroller programming, data acquisition algorithms and graphical user interface (Qt5). |

2014 | **Embedded Software Tester** at CS COMMUNICATION ET SYSTÈMES CANADA, *Intern*
Performing integration testing on critical embedded softwares for Pratt & Whitney aircraft engines. Performing dynamic coverage analysis, verifying software compliance with norms and standards (DO-178B) for certification. Designing tests, reviewing peer's tests.

TEACHING EXPERIENCE

Teaching assistant for the course "Artificial intelligence: probabilistic and learning techniques", Polytechnique Montreal. Winter 2020.

Programming instructor. Built and taught a course on Python programming, MISE Research Program, Ghana. In collaboration with ElementAI and Mila. Condensed teaching of Python programming to highly skilled high school students, to prepare their participation in machine learning research projects. Summer 2028.

SKILLS

Grad courses: (Mila): Deep Learning, Fundamentals of Machine Learning, Probabilistic Graphical Models, Reinforcement Learning, Continual Learning, Dynamical Systems. Machine Learning and Neural Networks, Computer Vision

Computer skills: PyTorch, Python, C, C++, Matlab, VHDL (FPGA), Java, Android development, Linux, OpenCV.

PROJECTS

Recognizing Violent Human Actions in Video with Deep Learning

Extracting Information using Ocular Commands and Augmented Reality

Reproducing InfoGAN: Interpretable Representation Learning by Information Maximizing Generative Adversarial Nets

INVITED TALKS

Google Brain Montreal, "Towards Understanding Generalization in Gradient-Based Meta-Learning", 2019.

EXTRACURRICULAR ACTIVITIES

2015 - 2016 | Student exchange at the Technical University of Madrid, Spain.
Two semesters

2013 - 2014 | Élikos technical society, Polytechnique Montreal.
Goal : Designing an autonomous quadcopter drone
Tasks : controller tuning (PID), testbench

2011 - 2013 | *Polycultures* student association, *Vice-President, public relations officer*,
Polytechnique Montreal,
Goal: To promote cultural diversity at the university, organize cultural events.