Maxime Wabartha

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maxwab.github.io

RESEARCH INTEREST

I am interested in designing representations for reinforcement learning that can lead to stable and scalable algorithms when used with (non-linear) function approximation.

EDUCATION

PhD in Computer Science, McGill University (Canada), 2019 - to date
Reinforcement learning, advised by Prof. Joelle Pineau

MSc in Applied Mathematics, Université Paris-Saclay (France), 2017-2018
Master "Mathématiques, Vision, Apprentissage" (MVA). Topic: *Learning diverse neural networks for improved exploration in deep reinforcement learning*

BS, MEng, École Centrale de Lille (France), 2010-2017

EXPERIENCE

Research intern, McGill University (Canada), May 2018 - Dec. 2018
Topic: *Exploration in deep reinforcement learning [2]*

Research intern, Polytechnique Montréal (Canada), May 2017 - Sep. 2017
Topic: *Semantic segmentation of the spinal cord [1]*

Business intelligence analyst, Shopwings (Australia), Jun. 2016 - Sep. 2016
Startup. Developing data analysis tools, project manager.

Internal vice-president, Centrale Lille Projets (France). Apr. 2014 - Mar. 2015
Student-led consulting company (100k€ turn-over).
In charge of HR, project manager for 5 projects (∼15k€).

References available upon request

TALKS

5-minute spotlight-like talk [4], IJCAI (online) Jan. 2021

Invited talk, NeuroPoly lab (Canada), Jun. 2019
Using diverse ensembles for out-of-distribution detection [3]

AWARDS

FRQNT scholarship, doctoral program 2021-2023
Fond de Recherche du Québec - Nature et Technologies.
Competitive provincial scholarship, 25% acceptance.

COMPUTER SKILLS

Programming: Python, Pytorch, TensorFlow
Software/OS: Git, Unix, Slurm, LaTeX, Matlab

PUBLICATIONS

[1] Zaimi, A.*, **Wabartha, M.***, Herman, V., Antonsanti, P. L., Perone, C. S., & Cohen-Adad, J. (2018). *AxonDeepSeg: automatic axon and myelin segmentation from microscopy data using convolutional neural networks.* Nature Scientific reports, 8(1), 1-11.

[2] **Wabartha, M.**, Durand, A., François-Lavet, V., & Pineau, J. (2018). *Sampling diverse neural networks for exploration in reinforcement learning.* NeurIPS Workshop on Bayesian Deep Learning.

[3] **Wabartha, M.**, Durand, A., François-Lavet, V., & Pineau, J. (2019). *Handling Black Swan Events in Deep Learning with Diversely Extrapolated Neural Networks.* NeurIPS Workshop on Safety and Robustness in Decision Making.

[4] **Wabartha, M.**, Durand, A., Francois-Lavet, V., & Pineau, J. (2020). *Handling Black Swan Events in Deep Learning with Diversely Extrapolated Neural Networks.* International Joint Conference on Artificial Intelligence, 2140-2147.

[5] Mangeat, G., Ouellette, R., **Wabartha, M.**, De Leener, B., Plattén, M., Danylaité Karrenbauer, V., ... & Granberg, T. (2020). *Machine Learning and Multiparametric Brain MRI to Differentiate Hereditary Diffuse Leukodystrophy with Spheroids from Multiple Sclerosis*. Journal of Neuroimaging.

* denotes an equal contribution.

TEACHING **Teaching assistant**, McGill University (Canada) Jan. 2020 - Apr. 2020
Artificial Intelligence (COMP424, 90h). Office hours, tutorials, invigilating, grading.

SERVICE Reviewer for the Reproducibility Challenge (2019, 2020), Montreal AI Symposium (2020).

LANGUAGES French (native), English (fluent), Italian (conversational), German (conversational).

EXTRA-CURRICULAR Practice of competitive badminton, 10 years
Misc. interests: Cinema, History, Technology.