

Salem Lahlou

Assistant Professor of Machine Learning

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Research interests : AI for science tools, generative flow networks, LLM reasoning.

Experience

- Sep 2024 – **Assistant Professor of Machine Learning**, MBZUAI, Abu Dhabi.
- 2024 **Senior Researcher**, Technology Innovation Institute, Abu Dhabi.
- 2018 – 2023 **Researcher**, Mila, Montréal - Canada.
- 2017 **Data Scientist**, Booking.com, Amsterdam.

Internships

- 2020 **Researcher**, Google Research, Paris.
- 2015 **Researcher**, IBM Research, Singapore.
- 2014 **Data Scientist**, Infosys, Bangalore.

Education

- 2018 – 2023 **Mila — Université de Montréal**, Montréal - Canada, PhD, Supervisor : Yoshua Bengio.
- 2015 – 2016 **École Normale Supérieure**, Cachan - France, M.Sc..
- 2012 – 2016 **École Polytechnique**, Palaiseau - France, B.Sc. + M.Sc..

Selected publications

(* : equal contribution ; blue : supervised students/postdocs)

- 2026 **Communication Enables Cooperation in LLM Agents : A Comparison with Curriculum-Based Approaches**, [Hachem Madmoun](#), **Salem Lahlou**. EACL 2026 (Oral).
- 2026 **Loss-Guided Auxiliary Agents for Overcoming Mode Collapse in GFlowNets**, [Idriss Malek](#), [Aya Laajil](#), [Abhijit Sharma](#), Eric Moulines, **Salem Lahlou**. AAAI 2026.
- 2025 **TorchGFN : A PyTorch GFlowNet Library**, Joseph D. Viviano*, [Omar G. Younis*](#), [Sanghyeok Choi*](#), Victor Schmidt, Yoshua Bengio, **Salem Lahlou**. JMLR 2025.
- 2025 **SVRPBench : A Realistic Benchmark for Stochastic Vehicle Routing Problem**, [Ahmed Heakl*](#), [Yahia Salaheldin Shaaban*](#), Martin Takac, **Salem Lahlou**, Zangir Iklassov. NeurIPS 2025.
- 2025 **On the Privacy Risks of Spiking Neural Networks : A Membership Inference Analysis**, [Junyi Guan*](#), [Abhijith Sharma*](#), Chong Tian, **Salem Lahlou**. UAI 2025.
- 2025 **Improved Exploration in GFlowNets via Enhanced Epistemic Neural Networks**, [Sajan Muhammad](#), **Salem Lahlou**. ICoIAS 2025.
- 2025 **PORT : Preference Optimization on Reasoning Traces**, **Salem Lahlou***, Abdalgader Abubaker*, Hakim Hacid. NAACL 2025.
- 2025 **Curriculum-Augmented GFlowNets for mRNA Sequence Generation**, [Aya Laajil](#), Abduragim Shtanchaev, [Sajan Muhammad](#), Eric Moulines, **Salem Lahlou**. NeurIPS 2025 MLSB Workshop.
- 2023 **A Theory of Continuous Generative Flow Networks**, **Salem Lahlou**, Tristan Deleu, Pablo Lemos, Dinghuai Zhang, Alexandra Volokhova, Alex Hernández-García, Léna Néhale Ezzine, Yoshua Bengio, Nikolay Malkin. ICML 2023.
- 2023 **GFlowNet Foundations**, Yoshua Bengio*, **Salem Lahlou***, Tristan Deleu*, Edward J. Hu, Mo Tiwari, Emmanuel Bengio. JMLR 2023.
- 2023 **GFlowNets and Variational Inference**, Nikolay Malkin*, **Salem Lahlou***, Tristan Deleu*, Xu Ji, Edward Hu, Katie Everett, Dinghuai Zhang, Yoshua Bengio. ICLR 2023.
- 2023 **DEUP : Direct Epistemic Uncertainty Estimation**, **Salem Lahlou***, Moksh Jain*, Hadi Nekoei, Victor I. Butoi, Paul Bertin, Jarrod Rector-Brooks, Maksym Korablyov, Yoshua Bengio. TMLR 2023.
- 2019 **BabyAI : A Platform to Study the Sample Efficiency of Grounded Language Learning**, Maxime Chevalier-Boisvert*, Dzmitry Bahdanau*, **Salem Lahlou**, Lucas Willems, Chitwan Saharia, Thien Huu Nguyen, Yoshua Bengio. ICLR 2019.

Service (selected)

- 2026 **MBZUAI ML Winter School 2026**, *Main Organizer : call for applicants, lecturer invitations, selection process, website, program design, funding coordination.*
- 2025 **ML Curriculum Committee (Jan–May 2025)**, *Introduced 7-week modules ; aligned faculty preferences with core coverage.*
- 2025 **TA Committee Chair (Jan–Oct 2025)**, *Led department-wide TA matching ; built preference-based system ; coordinated cross-department TA coverage.*