

Salem Lahlou

Assistant Professor of Machine Learning

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

Supervision : 27 researchers and students to date (23 current).

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 **Loss-Guided Auxiliary Agents for Overcoming Mode Collapse in GFlowNets**, Idriss Malek, Aya Laajil, Abhijit Sharma, Eric Moulines, Salem Lahlou. AAI 2026.
- 2025 **SVRPBench : A Realistic Benchmark for Stochastic Vehicle Routing Problem**, Ahmed Heakl*, Yahia Salaheldin Shaaban*, Martin Takac, Salem Lahlou, Zangir Iklassov. NeurIPS 2025.
- 2025 **Improved Exploration in GFlowNets via Enhanced Epistemic Neural Networks**, Sajan Muhammad, Salem Lahlou. ICoIAS 2025 (accepted).
- 2025 **PORT : Preference Optimization on Reasoning Traces**, Salem Lahlou*, Abdalgader Abubaker*, Hakim Hacid. NAACL 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 **Curriculum-Augmented GFlowNets for mRNA Sequence Generation**, Aya Laajil, Abduragim Shtanchaev, Sajan Muhammad, Eric Moulines, Salem Lahlou. NeurIPS 2025 MLSB Workshop (accepted).
- 2023 **A Theory of Continuous Generative Flow Networks**, Salem Lahlou, Tristan Deleu, Pablo Lemos, Dinghui 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, Dinghui Zhang, Yoshua Bengio. ICLR 2023.
- 2023 **DEUP : Direct Epistemic Uncertainty Estimation**, Salem Lahlou*, Moksh Jain*, Hadi Nekoei, Victor I. Butoi, Paul Bertin, Jarrid 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.*