

# 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*. AAAI 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, 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, 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.

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## 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.*