

# Salem Lahlou

Assistant Professor of Machine Learning

Abu Dhabi - UAE  
✉️ [salem@lahlou.org](mailto:salem@lahlou.org)  
<https://lahlou.org>

**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, Jarred 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.*