LEO FENG

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EDUCATION

Mila / Université de Montréal — Montreal, Canada
Ph.D. in Computer Science (Supervised by Prof. Yoshua Bengio) — *Sep 2020 - Present*

· Fast Track from M.Sc. program (Sep 2020 - Aug 2021)

University of Oxford — Oxford, UK
First Class Honours, B.A. in Computer Science — *Oct 2017 - Jun 2020*

· Thesis supervised by Prof. Shimon Whiteson and Dr. Luisa Zintgraf

MACHINE LEARNING RESEARCH/WORK EXPERIENCE

Borealis AI (Royal Bank of Canada) — Vancouver, Canada
Research Intern — *Jan 2022 - Present*

· Supervised by: Dr. Mohamed O. Ahmed, Dr. Frederick Tung, Dr. Hossein Hajimirsadeghi, and formerly Dr. Amir Abdi.
· Resulted in 5 first-author papers: 2x ICLR 2023, 1x ICLR 2024, 1x ICML 2024, and 1x arXiv preprint under submission at NeurIPS 2024
· Worked on (1) selective prediction (ICLR 2023) and (2) scalable attention-based modules for set-structured data (ICLR 2023 and ICML 2024) and sequence data (ICLR 2024 and arXiv preprint).

University of Oxford — Oxford, UK
Research Intern — *Jul 2019 - Oct 2019*

· Supervised by: Prof. Shimon Whiteson and Dr. Luisa Zintgraf

Kyoto University — Kyoto, Japan
Research Intern — *Dec 2018 - Jan 2019*

· Supervised by: Prof. Atsuko Sehara-Fujisawa
· Funded by JAXA (Japan Aerospace Exploration Agency)

Brave Software — London, UK
Research Intern — *Jun 2018 - Sep 2018*

· Supervised by: Dr. Panagiotis Tigas

CONFERENCE PUBLICATIONS

[**ICML 2024**] **L. Feng**, F. Tung, H. Hajimirsadeghi, Y. Bengio, and M. Ahmed. Memory Efficient Neural Processes via Constant Memory Attention Block. *ICML*, 2024.

[**ICLR 2024**] **L. Feng**, F. Tung, H. Hajimirsadeghi, Y. Bengio, and M. Ahmed. Tree Cross Attention. *ICLR*, 2024.

[**ICLR 2023**] **L. Feng**, H. Hajimirsadeghi, Y. Bengio, and M. Ahmed. Latent Bottlenecked Attentive Neural Processes. *ICLR*, 2023.

[**ICLR 2023**] **L. Feng**, M. Ahmed, H. Hajimirsadeghi, and A. Abdi. Towards Better Selective Classification. *ICLR*, 2023.

[**ICLR 2022 - Spotlight**] T. Deleu, D. Kanaa, **L. Feng**, G. Kerg, Y. Bengio, G. Lajoie, and P. Bacon. Continuous-Time Meta-Learning with Forward Mode Differentiation. *ICLR*, **Spotlight Presentation**, 2022.

[**ICML 2021**] L. Zintgraf, **L. Feng**, C. Lu, M. Igl, K. Hartikainen, K. Hofmann, and S. Whiteson. Exploration in Approximate Hyper-State Space for Meta Reinforcement Learning. *ICML*, 2021.

JOURNAL PUBLICATIONS

[**JMLR**] L. Zintgraf, S. Schulze, C. Lu, **L. Feng**, M. Igl, K. Shiarlis, Y. Gal, K. Hofmann, and S. Whiteson. VariBAD: Variational Bayes-Adaptive Deep RL via Meta-Learning. *Journal of Machine Learning Research (JMLR)*, 2021.

WORKSHOP PUBLICATIONS

[**ICML Workshop 2024**] **L. Feng**, F. Tung, H. Hajimirsadeghi, M. Ahmed, Y. Bengio, and G. Mori. Viewing Attention as a Recurrent Neural Network. *ICML Workshop on Next Generation of Sequence Modeling Architectures*, 2024.

[**ICML Workshop 2023**] **L. Feng**, F. Tung, H. Hajimirsadeghi, Y. Bengio, and M. Ahmed. Constant Memory Attention Block. *ICML Workshop on Efficient Systems for Foundation Models*, 2023.

[**NeurIPS Workshop 2022**] **L. Feng**, H. Hajimirsadeghi, Y. Bengio, and M. Ahmed. Efficient Queries Transformer Neural Processes. *NeurIPS Workshop on Meta-Learning*, 2022.

[**NeurIPS Workshop 2022**] **L. Feng**, P. Nouri, A. Muni, Y. Bengio, and P. Bacon. Designing Biological Sequences via Meta-Reinforcement Learning and Bayesian Optimization. *NeurIPS Workshop on Machine Learning in Structural Biology*, 2022.

[**ICLR Workshop 2020**] L. Zintgraf, **L. Feng**, M. Igl, K. Hartikainen, K. Hofmann, and S. Whiteson. Exploration in approximate hyper-state space. *ICLR Workshop on Beyond "Tabula Rasa" in Reinforcement Learning*, 2020.

[**NeurIPS Workshop 2019**] **L. Feng**, L. Zintgraf, B. Peng, and S. Whiteson. Viable: fast adaptation via backpropagating learned loss. *NeurIPS Workshop on Meta-Learning*, 2019.

SELECTED PREPRINTS

[**Preprint**] **L. Feng**, H. Hajimirsadeghi, F. Tung, M. Ahmed, Y. Bengio, and G. Mori. Attention as an RNN. *Under Submission at Neural Information Processing Systems (NeurIPS)*, 2024.

PATENTS AND APPLICATIONS

US18/316,105 and **CA3199276A** - Selective classification with alternate selection mechanism

SELECTED AWARDS/ACHIEVEMENTS

Outstanding Reviewer, ICML (Top 10%), Session Chair Invitee	2022
Scholarship ($100,000), FRQNT Doctoral (B2X) Scholarship	2022 - 2026
Scholarship ($17,500), Canada Graduate Scholarship (CGS-M) Scholarship	2021
Scholarship ($7000), UdeM Fast-Track to PhD Scholarship	2021
2x Scholarship ($7000), UdeM Excellence Scholarship (Bourse d'Excellence)	2020, 2021
Fellowship ($12,500), Molecule Discovery Fellowship	2020
Scholarship ($6,500), UdeM FAS AI Scholarship	2020

2x Bronze Medal, North Western European Regionals ACM ICPC, *UK*, *Netherlands* 2017, 2018

Bronze Medal, 29th International Olympiad of Informatics (IOI), *Iran* 2017

Gold Medal, Canadian Computing Olympiad, *Canada* 2017

1st Place (Out of 1925 students), Canadian Computing Olympiad – Qualifying Round, *Canada* 2017

Summer Conference Invitee, 36th International Mathematics Tournament of Towns, *Russia* 2015
(Topic: Enclosing walks and image segmentation algorithms)

Summer Conference Invitee, 35th International Mathematics Tournament of Towns, *Russia* 2014
(Declined)

Various Olympiads, Asian Pacific Math Olympiad (2015, 2017), USA Math Olympiad (2016), Canadian Math Olympiad (2015-2017), USA Computing Olympiad (Highest Division: Platinum) (2015-2017), Canadian Computing Olympiad (2015: Silver Medal, 2016: Bronze Medal)

TEACHING EXPERIENCE

Teaching Assistant, (Graduate course) IFT6135: Representation Learning, Université de Montréal, Canada, Fall 2021

Teaching Assistant, (Graduate course) IFT6390: Fundamentals of Machine Learning, Université de Montréal, Canada, Fall 2021

Teaching Assistant, (Undergraduate course) IFT3395: Fondements de l'Apprentissage Machine, Université de Montréal, Canada, Fall 2021

Teaching Assistant, IVADO/Mila Deep Learning School, Mila, Canada, Summer 2021

Teaching Assistant, (Undergraduate course) Design and Analysis of Algorithms, University of Oxford, UK, Hilary Term 2020

Teaching Assistant, (Undergraduate course) Concurrent Programming, University of Oxford, UK, Hilary Term 2020

REVIEWER

NeurIPS, ICML, ICLR, AAAI (Social Impact Track)