

LEO FENG

leofeng-ca.github.io \diamond leo.feng@mila.quebec

EDUCATION

Mila / Université de Montréal

Ph.D. in Computer Science (Supervised by Prof. Yoshua Bengio)

Montreal, Canada

Sep 2020 - Present

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

University of Oxford

First Class Honours, B.A. in Computer Science

Oxford, UK

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)

Research Intern

Vancouver, Canada

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

Research Intern

Oxford, UK

Jul 2019 - Oct 2019

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

Kyoto University

Research Intern

Kyoto, Japan

Dec 2018 - Jan 2019

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

Brave Software

Research Intern

London, UK

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

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|---|-------------|
| 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)