Mete Kemertas

Email: kemertas@cs.toronto.edu Website: metekemertas.github.io

Education

University of Toronto, Vector Institute
PhD · Computer Science · Sep 2020 - Present
· GPA: 4.00/4.00. Focus on reinforcement learning and optimal transport.
· Supervisors: Allan D. Jepson, Amir-massoud Farahmand.

University of Toronto
MScAC · Computer Science · Sep 2016 - Dec 2017
· GPA: 4.00/4.00. Focus on machine learning and natural language processing.

McGill University
BEng. · Electrical Engineering · Sep 2013 - Dec 2015
· GPA: 3.58/4.00. Minor degree: Software Engineering.

Istanbul Technical University
BSc. · Electronics and Communication Engineering · Sep 2011 - June 2013
· GPA: 3.69/4.00 (2nd in a class of 200+). Transferred to McGill University.

Industry Experience

Samsung AI Centre · *Toronto, ON*
PhD Student Researcher (part-time) · Apr 2021 - Sep 2022
Senior Research Engineer · Mar 2020 - Sep 2020
Research Engineer · May 2018 - Mar 2020
· Research in machine learning, natural language processing and computer vision.
· Hands-on applied research experience with early LLMs (e.g., BERT).
· Served as technical lead/co-lead for various research projects.
· Multiple publications at leading AI venues and 5 patents (4 granted, 1 pending).

Tealbook Inc. · *Toronto, ON*
Machine Learning Engineer · May 2017 - May 2018
· Developed a machine learning pipeline for large-scale web crawls, generating a supplier database that exceeded prior data volume by orders of magnitude.
· Reduced annual data licensing costs by over 100,000 USD by replacing external data.
· Designed and developed a recommendation engine for supplier discovery from scratch.

Ormuco Inc. · *Montreal, QC*
Software Developer · May 2016 - Sep 2016
· Developed the back-end of a notification and messaging system.
· Improved system performance by optimizing database queries and redesigning the caching system on the server side.

Ericsson · *Montreal, QC*
Software Development Intern · May 2015 - Sep 2015
· Participated in the development of a global-scale messaging product.

Selected Publications

A truncated Newton method for optimal transport.
M. Kemertas, A.M. Farahmand, A. Jepson.
International Conference on Learning Representations (ICLR), 2025. URL

Maximum entropy model correction in reinforcement learning.
A. Rakhsha, **M. Kemertas**, M. Ghavamzadeh, A.M. Farahmand.
International Conference on Learning Representations (ICLR), 2024.

Approximate policy iteration with bisimulation metrics.
M. Kemertas, A. Jepson.
Transactions on Machine Learning Research (TMLR), 2022.

Towards robust bisimulation metric learning.
M. Kemertas, T.T. Aumentado-Armstrong (equal contribution).
Advances in Neural Information Processing Systems (NeurIPS), 2021.

RankMI: A mutual information maximizing ranking loss.
M. Kemertas, L. Pishdad, K. Derpanis, and A. Fazly.
Conference on Computer Vision and Pattern Recognition (CVPR), 2020.

Preprints

Efficient and accurate optimal transport with mirror descent and conjugate gradients.
M. Kemertas, A. Jepson, A.M. Farahmand. *Preprint*, 2023.
(arXiv URL, new revision under review, available upon request)

Other Publications

Realizing efficient on-device language-based image retrieval.
Z. Hu, **M. Kemertas**, L. Xiao, C. Phillips, I. Mohomed, A. Fazly.
ACM Transactions on Multimedia Computing, Communications, and Applications, 2024.

CrispSearch: low-latency on-device language-based image retrieval.
Z. Hu*, L. Xiao*, **M. Kemertas***, C. Phillips, I. Mohomed, A. Fazly.
ACM Multimedia Systems Conference, 2022 (*equal contribution).

Dependency parsing with structure preserving embeddings.
Á. Kádár, L. Xiao, **M. Kemertas**, F. Fancellu, A. Jepson and A. Fazly.
Conference of the European Chapter of the Association for Computational Linguistics (EACL), 2021.

Dynamic scheduling of MPI-based distributed deep learning training jobs.
T. Capes, V. Raheja, **M. Kemertas**, and I. Mohomed.
MLSys Workshop at Neural Information Processing Systems (NeurIPS), 2018.

Patents

· US11645323 · Coarse-to-fine multimodal gallery search system
· US11430088 · Method and apparatus for data anonymization
· US11580392 · Apparatus for deep representation learning and method thereof
· US11693706 · Dynamic scheduling of distributed deep learning training jobs

Awards

NSERC CGS D Scholarship, May 2022
Doctoral scholarship for $105,000 awarded to highest-scoring PGS D applicants.
Mitacs Accelerate Grant, May 2017
Awarded funding ($30,000) for an 8-month applied research project.

Community

· Referee for ICLR '25, ICML '23, ICLR '23, NeurIPS '22, ICML '22, CVPR '22

Prog. Languages

· **Python** (expert)
· **Java, C, C++, C#** (proficient)
· **JavaScript, Swift, MATLAB, R** (prior experience)

Tools

PyTorch, NumPy, SciPy, Git, Apache Spark, Apache Beam, Unity