

# Mete Kemertas

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## EDUCATION

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- **University of Toronto** Toronto, ON  
*Doctor of Philosophy (PhD) in Computer Science* September 2020 - Present
  - GPA: 4.00/4.00. Focus on model-based reinforcement learning and computational optimal transport.
  - Supervisors: Allan D. Jepson, Amir-massoud Farahmand.
- **University of Toronto** Toronto, ON  
*Master of Science in Applied Computing (MScAC)* December 2017
  - GPA: 4.00/4.00. Focus on machine learning and natural language processing.
- **McGill University** Montreal, QC  
*Bachelor of Engineering (BEng) in Electrical Engineering* December 2015
  - GPA: 3.58/4.00. Minor degree: Software Engineering
- **Istanbul Technical University** Istanbul, Turkey  
*Bachelor of Science (BSc.) in Electronics and Communication Engineering* September 2011 - June 2013
  - GPA: 3.69/4.00 (2nd in a class of 200+). Transferred to McGill University.

## EXPERIENCE

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- **Samsung AI Research Centre** [🌐] Toronto, ON  
*Machine Learning Researcher (part-time as PhD student)* April 2021 - September 2022  
*Staff I Machine Learning Research Engineer* March 2020 - September 2020  
*Senior Machine Learning Engineer* May 2018 - March 2020
  - Led research efforts in multimodal deep learning (vision-language integration) resulting in the lab's first top-tier AI conference publication (first-author at CVPR), multiple other peer-reviewed publications, and 5 patents (4 granted, 1 pending).
  - Proposed and delivered research demos to senior executives under tight deadlines, leading to several spin-off projects and influencing lab-wide strategy; one demo directly initiated integration into a consumer product used by  $\approx 1$  billion users.
  - Invited to represent the lab at a global research gathering at Seoul, Korea, delivering a talk to senior scientists and executives.
  - Worked hands-on with early LLMs (BERT) and generative models (GANs), contributing to the lab's early exploration of foundational AI models.
- **TealBook** [🌐] Toronto, ON  
*Machine Learning Engineer* May 2017 - May 2018
  - As the company's first ML engineer, built an ML-enabled pipeline for filtering and cleaning up 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 (3rd party) data.
  - Proposed, implemented and deployed a recommendation engine for supplier discovery from scratch, which contributed to the startup's repositioning as an AI-first company.
  - Gave product-related webinars to potential and existing customers (procurement executives) on the value proposition of the supplier recommendation engine, generating several B2B sales leads and improving adoption.
- **Ormucio** [🌐] Montreal, QC  
*Software Developer (Backend)* May 2016 - September 2016
  - Reduced latency and improved user experience by optimizing database queries and redesigning the caching system on the server side.
  - Developed the back-end of a notification and messaging system.
- **Ericsson** [🌐] Montreal, QC  
*Software Development Intern* May 2015 - September 2015
  - Participated in the development of a global-scale messaging product.

## SELECTED PUBLICATIONS

C=CONFERENCE, J=JOURNAL, P=PATENT, S=IN SUBMISSION, W=WORKSHOP

- [C.1] M. Kemertas, A-m. Farahmand, A.D. Jepson. "A truncated Newton method for optimal transport." *International Conference on Learning Representations (ICLR)*, 2025.
- [C.2] A. Rakhsha, M. Kemertas, M. Ghavamzadeh, A-m. Farahmand. "Maximum entropy model correction in reinforcement learning." *International Conference on Learning Representations (ICLR)*, 2024.
- [S.1] M. Kemertas, A.D. Jepson, A-m. Farahmand. "Efficient and accurate optimal transport with mirror descent and conjugate gradients." *Preprint under review*, 2023.
- [J.1] M. Kemertas, A.D. Jepson. "Approximate policy iteration with bisimulation metrics." *Transactions on Machine Learning Research (TMLR)*, 2022.
- [C.3] M. Kemertas, T. Aumentado-Armstrong (equal contribution). "Towards robust bisimulation metric learning." *Neural Information Processing Systems (NeurIPS)*, 2021.
- [C.4] M. Kemertas, L. Pishdad, K. Derpanis, and A. Fazly. "RankMI: A mutual information maximizing ranking loss." *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2020.



## PATENTS

- [P.1] Z. Hu, L. Xiao, M. Kemertas, C.R. Phillips, I. Mohomed, A. Fazly. **Method of processing multimodal retrieval tasks, and an apparatus for the same**. USPTO, Patent No. 20230237089A1. Application: 2023-01 (Pending).
- [P.2] M. Kemertas. **Coarse-to-fine multimodal gallery search system with attention-based neural network models**. USPTO, Patent No. 11645323. Application: 2020-10, Grant: 2023-05.
- [P.3] M. Kemertas, L. Pishdad, K. Derpanis, A. Fazly. **Apparatus for deep representation learning and method thereof**. USPTO, Patent No. 11580392. Application: 2020-02, Grant: 2023-02.
- [P.4] A.D. Jepson, A. Levinshtein, M. Kemertas, H. Zhang, H. R. Kaviani. **Method and apparatus for data anonymization**. USPTO, Patent No. 11430088. Application: 2019-12, Grant: 2022-08.
- [P.5] T. Capes, I. Mohomed, V. Raheja, M. Kemertas. **System and method for dynamic scheduling of distributed deep learning training jobs**. USPTO, Patent No. 11693706. Application: 2019-11, Grant: 2023-07.

## OTHER PUBLICATIONS

- [J.2] Z. Hu, M. Kemertas, L. Xiao, C. Phillips, I. Mohomed, A. Fazly. "Realizing efficient on-device language-based image retrieval." *ACM Transactions on Multimedia Computing, Communications, and Applications*, 2024.
- [C.5] Z. Hu\*, L. Xiao\*, M. Kemertas\*, C. Phillips, I. Mohomed, A. Fazly (\*equal contribution). "CrispSearch: low-latency on-device language-based image retrieval." *ACM Multimedia Systems Conference*, 2022.
- [C.6] Á. Kádár, L. Xiao, M. Kemertas, F. Fancellu, A. Jepson and A. Fazly. "Dependency parsing with structure preserving embeddings." *Conference of the European Chapter of the Association for Computational Linguistics (EACL)*, 2021.
- [W.1] T. Capes, V. Raheja, M. Kemertas, and I. Mohomed. "Dynamic scheduling of MPI-based distributed deep learning training jobs." *MLSys Workshop at Neural Information Processing Systems (NeurIPS)*, 2018.

## HONORS AND AWARDS

- **NSERC CGS D Scholarship** May 2022  
*National Sciences and Engineering Research Council of Canada (NSERC)* 
  - Doctoral scholarship for \$120,000 awarded to highest-scoring PGS D applicants.
- **Vector Research Grant** 2023, 2024  
*Vector Institute*
  - A \$6,000 grant awarded to graduate students affiliated with the Vector Institute.
- **MITACS Accelerate Grant** May 2017  
*Mathematics of Information Technology and Complex Systems (MITACS)* 
  - Awarded funding (\$30,000) for an 8-month applied research project.

## MISCELLANEOUS

- **Research Community Service**
  - Served as a referee for major AI conferences: ICLR '25, ICML '23, ICLR '23, NeurIPS '22, ICML '22, CVPR '22.
- **Programming Languages**
  - Expert: Python
  - Proficient: Java, C, C++, C#
  - Prior experience: JavaScript, Swift, MATLAB, R