Zheda Mai

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: https://zheda-mai.github.io
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EDUCATION

Ph.D. Computer Science and Engineering, **Ohio State University** 2022-2027(Expected)
- Research areas: Continual Learning, Transfer Learning
- Advisor: Professor Wei-Lun (Harry) Chao
- GPA: 4.0/4.0

M.A.Sc. Information Engineering, **University of Toronto** 2018-2021
- Research areas: Continual Learning, Recommender Systems
- Advisor: Professor Scott Sanner
- GPA: 4.0/4.0

B.A.Sc. Engineering Science, **University of Toronto** 2012-2017
- Electrical Engineering Major with Engineering Business Minor

PUBLICATIONS

Conferences

[NeurIPS 2023] Cheng-Hao Tu*, Hong-You Chen*, **Zheda Mai**, Jike Zhong, Vardaan Pahuja, Tanya Berger-Wolf, Song Gao, Charles Steward, Yu Su, Wei-Lun Chao. Holistic Transfer: Towards Non-Disruptive Fine-Tuning with Partial Target Data. In *Proceedings of the Conference on Neural Information Processing Systems (NeurIPS)*, 2023.

[CVPR 2023] **Zheda Mai***, Cheng-Hao Tu*, Wei-Lun Chao. Visual Query Tuning: Towards Effective Usage of Intermediate Representations for Parameter and Memory Efficient Transfer Learning.In *Proceedings of the Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023.

[WWW 2022] **Zheda Mai***, Tianshu Shen* Ga Wu, Scott Sanner. Distributional Contrastive Embedding for Clarification-based Conversational Critiquing. In *Proceedings of the ACM Web Conference (WWW)*, 2022.

[SIGIR 2022] Zhaolin Gao, Tianshu Shen, **Zheda Mai**, Mohamed Reda Bouadjenek, Scott Sanner. Mitigating the Filter Bubble while Maintaining Relevance: Targeted Diversification with VAE-based Recommender Systems. In *Proceedings of Special Interest Group on Information Retrieval (SIGIR)*, 2022.

[AAAI 2021] **Zheda Mai***, Jihwan Jeong*, Dongsub Shim*, Scott Sanner, Hyunwoo Kim, Jongseong Jang. Online Class-Incremental Continual Learning with Adversarial Shapley Value. In *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI)*, 2021.

Journals

[JVCI 2023] Ruiwen Li, **Zheda Mai**, Chiheb Trabelsi, Zhibo Zhang, Jongseong Jang, Scott Sanner. TransCAM: Transformer Attention-based CAM Refinement for Weakly Supervised Semantic Segmentation. In *Journal of Visual Communication and Image Representation (JVCI)*, 2023.

[IPM 2023] Tianshu Shen, Jiaru Li, Mohamed Reda Bouadjenek, **Zheda Mai**, Scott Sanner. Unintended Bias in Language Model-driven Conversational Recommendation. In *Information Processing and Management (IPM)*, 2023.

[Neurocomputing 2022] **Zheda Mai**, Ruiwen Li, Jihwan Jeong, David Quispe, Hyunwoo Kim, Scott Sanner. Online Continual Learning in Image Classification: An Empirical Survey. In *Neurocomputing*, 2022.

[AIJ 2022] Vincenzo Lomonaco, . . . , **Zheda Mai**, etc. CVPR 2020 Continual Learning in Computer Vision Competition: Approaches, Results, Current Challenges and Future Directions. In *Artificial Intelligence Journal (AIJ)*, 2022.

Workshops

[NeurIPS 2023] **Zheda Mai***, Tianle Chen*, Ruiwen Li, Wei-lun Chao. Segment Anything Model (SAM) Enhanced Pseudo Labels for Weakly Supervised Semantic Segmentation. In *Proceedings of the Conference on Neural Information Processing Systems (NeurIPS) Workshops*, 2023.

[CVPR 2021] **Zheda Mai**, Ruiwen Li, Hyunwoo Kim, Scott Sanner. Supervised Contrastive Replay: Revisiting the Nearest Class Mean Classifier in Online Class-Incremental Continual Learning. In *Proceedings of the Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, 2021.

[CVPR 2020] **Zheda Mai**, Hyunwoo Kim, Jihwan Jeong, Scott Sanner. Batch-level Experience Replay with Review for Continual Learning. In *Proceedings of the Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, 2020. W1

[ICDM 2020] **Zheda Mai***, Ga Wu*, Kai Luo, Scott Sanner. Attentive Autoencoders for Multifaceted Preference Learning in One-class Collaborative Filtering. In *Proceedings of International Conference on Data Mining (ICDM) Workshops*, 2020.

Technical Reports

[T1] JinPeng Zhou, Ga Wu, **Zheda Mai**, Scott Sanner. Noise Contrastive Estimation for Autoencoding-based Collaborative Filtering.

AWARDS

- **1st place** of the CLVision Continual Learning challenge at **CVPR** 2020 — 2020
  Zheda Mai, Hyunwoo Kim, Jihwan Jeong, Scott Sanner.
- **4th place** of the CLVision Continual Learning challenge at **CVPR** 2021 — 2021
  Zheda Mai.

EXPERIENCE

Data Scientist, *Optimy AI*, Canada — 2021-2022
- Developed machine learning models for customer engagement prediction, high-valued customer identification, and purchase likelihood prediction.
- Designed and implemented business intelligence analytic solutions in Power BI.
- Designed and maintained the real-time click stream data system.

Machine Learning Engineer Intern, *Pitney Bowes*, Canada — May 2019 - Oct. 2019
- Built a map style extraction model with CNN and multi-task learning in TensorFlow and Keras.
- Developed MapBasic scripts to generate and augment 500k raster map data.

Software Engineer Intern, *AMD*, Canada — 2015-2016
- Automated Lint, Synthesis and other design verification tools using Python for faster design cycles.
- Provided support for various design verification tools for a team with over 120 Engineers globally.

PROFESSIONAL SERVICE

I am a conference reviewer for
- ICML(2023)
- NeurIPS (2023)
- ICLR (2024)

I am a journal reviewer for
- Artificial Intelligence (AIJ)
- Frontiers in Artificial Intelligence

TEACHING

Teaching Assistant
University of Toronto
- APS1070: Foundations of Data Analytics and Machine Learning (2019, 2020)
- MIE451: Decision Support Systems (2019, 2020)
- MIE1628: Big Data Science (2020)

TALKS

- Continual Learning in Image Classification. Vector Institute. July 2020
- Recent Advances in Continual Learning. D3M Lab, University of Toronto Jan 2022

SKILLS

Techniques: Python, SQL, Git, LaTex, AWS, PySpark, JavaScript
Machine Learning Tools: PyTorch, Keras, TensorFlow, NumPy, Pandas, SciPy, scikit-learn