# 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

[C5] Cheng-Hao Tu*, Hong-You Chen*, **Zheda Mai**, Jike Zhong, Vardaan Pahuja, Tanta 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.

[C4] **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.

[C3] Tianshu Shen*, **Zheda Mai***, Ga Wu, Scott Sanner. Distributional Contrastive Embedding for Clarification-based Conversational Critiquing. In *Proceedings of the ACM Web Conference **(WWW)***, 2022.

[C2] 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.

[C1] **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

[J4] 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.

[J3] 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.

[J2] **Zheda Mai**, Ruiwen Li, Jihwan Jeong, David Quispe, Hyunwoo Kim, Scott Sanner. Online Continual Learning in Image Classification: An Empirical Survey. In ***Neurocomputing***, 2022.

[J1] 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

[W3] **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.

[W2] **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] **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.

### Preprints

[T1] **Zheda Mai***, Tianle Chen*, Ruiwen Li, Wei-lun Chao. Segment Anything Model (SAM) Enhanced Pseudo Labels for Weakly Supervised Semantic Segmentation.

[T2] 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