Zheda Mai

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Educations

***M.A.Sc.*, Information Engineering,** Advisor: Scott Sanner**,** University of Toronto 2018 – 2021

- Research area: Continual Learning in Computer Vision, Recommender System
- GPA 4.0/4.0: Structural Learning and Inference, Neural Network and Deep Learning, Decision Support Systems, Natural Language Processing, Big Data Science

***B.A.Sc.*, Engineering Science (ECE Option),** University of Toronto 2012 - 2017

- Certificate in Engineering Business and Entrepreneurship

Awards

- **1st place** of the CLVISION Continual Learning challenge at **CVPR2020**
  Zheda Mai, etc. Batch-level Experience Replay with Review for Continual Learning
- 3rd place of the CLVISION Continual Learning challenge at **CVPR2021**
  Zheda Mai, Supervised Contrastive Replay for Continual Learning

Publications

- **Zheda Mai***, Dongsub Shim*, Jihwan Jeong*, Scott Sanner, Online Class-Incremental Continual Learning with Adversarial Shapley Value. In Thirty-Fifth AAAI Conference on Artificial Intelligence, **AAAI** 2021
- **Zheda Mai,** Ruiwen Li, Scott Sanner, Supervised Contrastive Replay in Online Class-Incremental Continual Learning. In Workshop on Continual Learning in Computer Vision, **CVPR2021**
- **Zheda Mai***, Ga Wu*, Kai Luo, Scott Sanner. Attentive Autoencoders for Multifaceted Preference Learning in One-class Collaborative Filtering. In Workshop on Advanced Neural Algorithms and Theories for Recommender Systems, **ICDM** 2020
- **Zheda Mai**, Ruiwen Li, Jihwan Jeong, Hyunwoo Kim, Scott Sanner. A Comparative Empirical Survey of Online Continual Learning in Image Classification. Submitted to **Neurocomputing**
- Vincenzo Lomonaco, ... **Zheda Mai**, etc. CVPR 2020 Continual Learning in Computer Vision Competition: Approaches, Results, Current Challenges and Future Directions. Submitted to journal of *Artificial Intelligence,* AIJ
- JinPeng Zhou, Ga Wu, **Zheda Mai**, Scott Sanner. Noise Contrastive Estimation for Autoencoding-based Collaborative Filtering.

Experiences

Machine Learning Intern, *Pitney Bowes Inc* 2019

- Built a map style emulation model with CNN, Multi-Task Learning and Transfer Learning.
- Implemented RGB to CIELAB algorithm and CIE94 color difference in TensorFlow and customized the Keras loss function with the TensorFlow implementation mentioned above.
- Conducted error analysis and hyperparameter tuning to improve accuracy from 60% to 92%
- Developed MapBasic scripts to generate and augment 100k raster map training data

Computer Engineering Intern, *AMD Inc.* 2015 - 2016

- Managed and provided support for design verification tools for a team consisting of over 120 Engineers in North American and Asian Pacific sites
- Developed new tools and enhanced pre-existing ones to support System Verilog interface
- Scripted in Python and Perl to automate above-mentioned tools

Software Engineer, *KapCha* 2018-2019

- KapCha is a Next Canada-backed startup for on-demand professional photography (Next36 2018 cohort)
- Led a team of 3 software engineers to develop the backend and frontend of the platform in Python(Django), PostgreSQL, jQuery and Bootstrap
- Deployed the scalable solution on AWS using Elastic Beanstalk with EC2, S3, ELB

Skills

- Languages: Python, SQL, JavaScript, Swift, Go, Ruby, Perl
- Analysis Tools: PyTorch , TensorFlow, Keras, Scikit-learn, NumPy, SciPy, Pandas, NLTK
- Cloud Tools: AWS, PySpark, Hive, Hadoop

Teaching

Head TA for:

- MIE1513/451: Decision Support Systems (2019 Fall, 2020 Winter\Fall)
- APS1070: Foundations of Data Analytics and Machine Learning (2019 Fall, 2020 Winter\Summer\Fall)