Mingde "Harry" Zhao

BASICS

Email: mingde.zhao@mail.mcgill.ca

Location: Montréal & Ottawa, Canada

Homepage: http://mingde.world

Languages: English (native), 汉语(母语), Français (avancé)

RESEARCH INTERESTS

General Intelligence Principles, Reasoning, Planning, Reinforcement Learning, Neuro-Inspired AI

EDUCATION

Doctor of Philosophy, Computer Science 2020 - Now

McGill University / Mila (L'institut québécois d'intelligence artificielle), CGPA: 4.0/4.0

Advisors: Doina Precup & Yoshua Bengio

Master of Science, Computer Science 2018 - 2020

McGill / Mila, CGPA: 4.0/4.0; Advisors: Doina & Xiaowen Chang

Bachelor of Engineering, Computer Science & Technology 2014 - 2018

Dalian University of Technology, GPA: 90.0%+; Advisor: Hongwei Ge

*CONFERENCE PAPER HIGHLIGHTS (Check **Google Scholar** for complete list)*

- "*Consciousness-Inspired Spatio-Temporal Abstractions for Better Generalization in Reinforcement Learning*" – **M.Z.**, S. Alver, H. van Seijen, R. Laroche, D. Precup, Y. Bengio @ ICLR 2024.
- "*Training Matters: Unlocking Potentials of Deeper Graph Convolutional Neural Networks*" – S. Luan*, **M.Z.***, X.W. Chang & D. Precup @ Complex Networks 2023, ORAL.
- "*Revisiting Heterophily For Graph Neural Networks*" – S. Luan, C, Hua, Q. Lu, J. Zhu, **M.Z.**, S. Zhang, X.W. Chang, D. Precup @ NeurIPS 2022.
- "*Temporal Abstractions-Augmented Temporally Contrastive Learning: An Alternative to the Laplacian in RL*" - A. Erraqabi, M.C. Machado, **M.Z.***, S. Sukhbaatar, A. Lazaric, L. Denoyer, Y. Bengio @ UAI 2022.
- "*A Consciousness-Inspired Planning Agent for Model-Based Reinforcement Learning*" - **M.Z.***, Z. Liu*, S. Luan*, S. Zhang*, D. Precup, Y. Bengio @ NeurIPS 2021.
- "*META-Learning State-Based Eligibility Traces for More Sample-Efficient Policy Evaluation*" – **M.Z.***, S. Luan*, I. Porada*, X.W. Chang & D. Precup @ AAMAS 2020.
- "*Break the Ceiling: Stronger Multi-Scale Deep Graph Convolutional Networks*" – S. Luan*, **M.Z.***, X.W. Chang & D. Precup @ NeurIPS 2019.
- "*Exploring Overall Contextual Information for Image Captioning in Human-Like Cognitive Style*" – H. Ge, Z. Yan, K. Zhang, **M.Z.** & L. Sun @ ICCV 2019.
- "*Strategy Selection in Complex Game Environments based on Transfer Reinforcement Learning*" – H. Ge, **M.Z.**, K. Zhang & L. Sun @ IJCNN 2019.
- "*A Many Objective Evolutionary Algorithm with Fast Clustering & Reference Point Redistribution*" – **M.Z.**, H. Ge, H. Han & L. Sun @ CEC 2018.

* Equal Contributions

*JOURNAL PAPER HIGHLIGHTS (Check **Google Scholar** for complete list)*

- "*Clothes-Changing Person Re-Identification via Universal Framework with Association and Forgetting Learning*" – Y. Liu, H. Ge, Z. Wang, Y. Hou, **M.Z.** @ IEEE Transactions on Multimedia, 2023.
- "*Discriminative Identity-Feature Exploring and Differential Aware Learning for Unsupervised Person Re-Identification*" – Y. Liu, H. Ge, Z. Wang, Y. Hou, **M.Z.** @ IEEE Transactions on Multimedia, 2023.
- "*Bi-space Interactive Cooperative Coevolution for Large Scale Blackbox Optimization*" – H. Ge, **M.Z.**, Y. Hou, K. Zhang, L. Sun, G. Tan, Q. Zhang, C.L.P. Chen @ Applied Soft Computing, 2020.
- "*A Two-Engine Interaction Driven Many-Objective Evolutionary Algorithm with Feasibility-Aware Adaptation*" – H. Ge, **M.Z.**, K. Zhang & Y. Hou @ Applied Soft Computing, 2019.
- "*An Interactive Many Objective Evolutionary Algorithm with Cascade Clustering & Reference Point Incremental Learning*" – H. Ge*, **M.Z.***, L. Sun, Z. Wang, G. Tan, Q. Zhang & C.L.P. Chen @ IEEE Transactions on Evolutionary Computation, 2018.

*NON-ARCHIVAL PAPERS (Check **Google Scholar** for complete list)*

- "*Complete the Missing Half: Augmenting Aggregation with Diversification for Graph Convolutional Networks*" – S. Luan*, **M.Z.***, C. Hua*, X.W. Chang & D. Precup @ NeurIPS 2022, New Frontiers in Graph Learning Workshop, ORAL.

*SOFTWARE & PATENTS (Check **GitHub** for more)*

- "*Captur3*": turning iPhones into 3D scanners, upload your favs to the metaverse Download on the App Store
- "*Fast Dichotomic CNN for Traffic Sign Identification*" – H. Ge, **M.Z.**, X. Yang @ SIPO, 2018
- "*Peach Segmentation with Deep Reinforcement Learning*" – H. Ge, **M.Z.**, J. Lin, L. Sun @ SIPO, 2018.

WORK, TRAINING & VOLUNTEERING

Visiting Student @ Brain and Mind Research Institute, uOttawa	2024-2025
Research Intern @ Borealis AI (Montreal)	2024
Research Scientist @ Haiper (Canada)	2021 - 2023
Research Intern @ Microsoft Research (Montreal)	2022 - 2023
Conference Paper Reviewer @ NeurIPS	2022
CIFAR Deep Learning & Reinforcement Learning Summer School	2019, 2020
Teaching Assistant @ McGill University	2019 - 2021

HONORS & AWARDS

Ph.D.:

FRQNT Ph.D. Fellowship (*1st-place recipient, 2020*)

Master:

DeepMind Graduate Award (2019)

Undergraduate:

Academic Excellence Awards (2015 - 2018)

Outstanding Bachelor Thesis (2018)

Outstanding Student Researcher of the Year (2018)