

# Mingde "Harry" Zhao



## BASICS

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Email: [mingde.zhao@mail.mcgill.ca](mailto:mingde.zhao@mail.mcgill.ca) Location: Montréal, Québec, Canada

Homepage: <http://mingde.world> Languages: English (native), 汉语(母语), Français (avancé)

## RESEARCH INTERESTS

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

## EDUCATION

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**Doctor of Philosophy, Computer Science** 2020 - Now

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

Advisors: Doina Precup & Yoshua Bengio

**Master of Science, Computer Science** 2018 - 2020

Mila / McGill, 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)

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- "Consciousness-Inspired Spatio-Temporal Abstractions for Better Generalization in Reinforcement Learning" - M.Z., S. Alver, H. van Seijen, R. Laroché, 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.

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\* 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 
- "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

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 (1<sup>st</sup>-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)

