

Zhaocheng Zhu

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EDUCATION

Mila - Québec AI Institute / Université de Montréal, Canada

Sep. 2019 - Present

Ph.D. in Computer Science

- Graph Representation learning, Knowledge Graphs, Drug Discovery, Machine Learning Systems
- Advisor: Jian Tang

Mila - Québec AI Institute / Université de Montréal, Canada

Sep. 2018 - Aug. 2019

M.Sc. in Computer Science, transferred to Ph.D.

- Graph Representation learning, Machine Learning Systems
- Advisor: Jian Tang

Peking University, China

Sep. 2014 - July 2018

B.S. in Computer Science (with honors)

- Natural Language Processing, Unsupervised Representation Learning, Word Semantics
 - Computer Vision, Object Detection
- Thesis Advisor: Yizhou Wang, Jifeng Dai (Microsoft Research Asia)

INTERNSHIP

Microsoft Research Asia, Beijing, China

Sep. 2017 - May 2018

- Video object detection with optical flow and temporal context
 - Reproduction of Mask R-CNN for keypoint detection
 - Towards accurate localization in object detection
- Mentor: Jifeng Dai

Carnegie Mellon University, Pittsburgh, United States

July 2017 - Sep. 2017

- Stacked local linear explanations for deep neural networks
- Advisor: Pradeep Ravikumar

Mitsubishi Information Technology R&D Center, Kamakura, Japan

July 2016 - Aug. 2016

- Dialog State Tracking Challenge 5
 - Chinese language understanding for navigation systems
- Mentor: Yusuke Koji

PUBLICATIONS

Neural Bellman-Ford Networks: A General Graph Neural Network Framework for Link Prediction

Zhaocheng Zhu, Zuobai Zhang, Louis-Pascal Xhonneux, Jian Tang. In *Conference on Neural Information Processing Systems*, 2021. Rank 12/39 in the link prediction task of OGB-LSC.

KEPLER: A Unified Model for Knowledge Embedding and Pre-trained Language Representation

Xiaozhi Wang, Tianyu Gao, **Zhaocheng Zhu**, Zhengyan Zhang, Zhiyuan Liu, Juanzi Li, Jian Tang. In *Transactions of the Association for Computational Linguistics*, 2021.

GraphAF: A Flow-based Autoregressive Model for Molecular Graph Generation

Chence Shi^{*}, Minkai Xu^{*}, **Zhaocheng Zhu**, Weinan Zhang, Ming Zhang, Jian Tang. In *International Conference on Learning Representations*, 2020

Self-Adaptive Network Pruning

Jinting Chen, **Zhaocheng Zhu**, Cheng Li, Yuming Zhao. In *International Conference on Neural Information Processing*, 2019. (Best Student Paper Finalist)

GraphVite: A High-Performance CPU-GPU Hybrid System for Node Embedding

Zhaocheng Zhu, Shizhen Xu, Meng Qu and Jian Tang. In *The World Wide Web Conference*, pp. 2494-2504, 2019.

Saliency Supervision: An Intuitive and Effective Approach for Pain Intensity Regression

Conghui Li, **Zhaocheng Zhu** and Yuming Zhao. In *International Conference on Neural Information Processing*, pp. 455-464, 2018.

Context Aware Document Embedding

Zhaocheng Zhu and Junfeng Hu. *arXiv preprint arXiv:1707.01521*, 2017.

Dialog State Tracking with Attention-based Sequence-to-Sequence Learning

Takaaki Hori, Hai Wang, Chiori Hori, Shinji Watanabe, Bret Harsham, Jonathan Le Roux, John R Hershey, Yusuke Koji, Yi Jing, **Zhaocheng Zhu** and Takeyuki Aikawa. In *IEEE Spoken Language Technology Workshop (SLT)*, pp. 552-558, 2016. (Runner up at Dialog State Tracking Challenge 5)

SELECTED PROJECTS

TorchDrug: A Powerful and Flexible Machine Learning Platform for Drug Discovery

(leader of TorchDrug team)

Machine learning development platform for drug discovery in PyTorch. Recognized by *PyTorch ecosystem*. Support 5 tasks, more than 20 models. Over 700 stars and 4,500 downloads.

<https://torchdrug.ai> <https://github.com/DeepGraphLearning/torchdrug>

GraphVite: A General and High-Performance Graph Embedding System for Various Applications

(leader of GraphVite team)

General and high-performance graph embedding system. Support 3 applications, 10 models and more than 40 baseline benchmarks. Over 900 stars and 4,800 downloads.

<https://graphvite.io> <https://github.com/DeepGraphLearning/graphvite>

Literature of Deep Learning for Graphs (with Meng Qu and Weiping Song)

Comprehensive paper list of deep learning for graphs. Over 2,800 stars.

<https://github.com/DeepGraphLearning/LiteratureDL4Graph>

Aleo: A Toolkit for Mahjong AI (with Fangyin Wei)

Winner of 2018 Game AI course at Peking University, with a win rate of 46.8% in the 4-player Mahjong.

<https://github.com/KiddoZhu/Aleo>

HONORS AND AWARDS

Tuition Fee Exemption Scholarships, Université de Montréal	2019 - 2021
Outstanding Graduate Student, Peking University	2018
Top Talent Class of EECS, Peking University	2016 - 2018
Outstanding Research Award, Peking University	2016
Kwang-Hua Scholarship, Peking University	2016
Honorable Mention, Mathematical Contest in Modeling (MCM)	2016
Merit Student, Peking University	2015
Tung OCCL Scholarship, Peking University	2015
Honorable Mention, Mathematical Contest in Modeling (MCM)	2015
Group Champion, Peking University Debate Competition for Freshman	2014

SERVICE

Reviewer, TKDE 2022

Reviewer, GNNSys Workshop, MLSys 2021

Reviewer, DLG Workshop, KDD 2020

Reviewer, GRL Workshop, NeurIPS 2019

League branch secretary, Society of Photography, Peking University

Sep. 2017 - June 2018

Leader of story portrait group, Society of Photography, Peking University

Apr. 2015 - Aug. 2017

Member of organizers & news team, HackPKU, Peking University

Apr. 2016

SKILLS

Programming Languages:

- Proficient: C/C++, Python, Pascal/Object Pascal
- Capable: MATLAB, SQL, Bash, Assembly, HTML/CSS

Frameworks: CUDA, PyTorch, MXNet, Keras, TensorFlow

Toolchains: Git, L^AT_EX, GDB, CMake, Conda(build), Pip(build), Photoshop

Languages: Mandarin Chinese(native), English(proficient), French(beginner)

Open-Source Contribution: PyTorch-Geometric, Gensim, PyKEEN

Good at designing and organizing large code bases (> 20k lines), and accelerating deep learning models.