Zekun Tong

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Education

National University of Singapore, ***School of Engineering*** — Kent Ridge, Singapore
PhD in Industrial Systems Engineering | Supervisor: Prof. Andrew Lim and Prof. Chee Yeow Meng — *Aug. 2018 – Mar. 2023*

Xidian University, ***School of Computer Science and Technology*** — Xi'an, Shaanxi, China
B.E. in Computer Science and Technology | Studied in Excellence Engineer Class — *Sept. 2014 – Jun. 2018*

Experience

Quant Researcher — Sep. 2022 – Now
Prop Trading Firm — *Singapore*

Research Intern — Apr. 2021 – Jul. 2021
ByteDance AI Lab — *Singapore*

Research Intern — Dec. 2020 – Mar. 2021
Alibaba DAMO Academy — *Hangzhou, China*

Research Assistant — Jan. 2018 – Jun. 2018
National University of Singapore — *Singapore*

Research Intern — Jan. 2017 – Mar. 2017
Sungkyunkwan University — *Suwon, Korea*

Publications

Graph Neural Networks

Directed Graph Contrastive Learning — poster | NeurIPS 2021
- **Zekun Tong**, Yuxuan Liang, Henghui Ding, Yongxing Dai, Xinke Li, Changhu Wang

Digraph Inception Convolutional Networks — poster | NeurIPS 2020
- **Zekun Tong**, Yuxuan Liang, Changsheng Sun, Xinke Li, David S. Rosenblum, Andrew Lim

Directed Graph Convolutional Network — ArXiv 2020
- **Zekun Tong**, Yuxuan Liang, Changsheng Sun, David S. Rosenblum, Andrew Lim

Computer Vision

Bridging the Source-to-target Gap for Cross-domain Person Re-Identification with Intermediate Domain — journal | IJCV 2024
- Yongxing Dai, Yifan Sun, Jun Liu, **Zekun Tong**, Yi Yang, Ling-Yu Duan

Primitive3D: Learning from 3D Objects Assembled with Random Primitives — poster | CVPR 2022
- Xinke Li, Henghui Ding, **Zekun Tong**, Yuwei Wu, Yeow Meng Chee

Dual-refinement: Joint Label and Feature Refinement for Unsupervised Domain Adaptive Person Re-ID — journal | TIP 2021
- Yongxing Dai, Jun Liu, Yifan Sun, **Zekun Tong**, Chi Zhang, Lingyu Duan

PointBA: Towards Backdoor Attacks in 3D Point Cloud — poster | ICCV 2021
- Xinke Li, Zhirui Chen, Yue Zhao, **Zekun Tong**, Yabang Zhao, Andrew Lim, Joey Tianyi Zhou

IDM: An Intermediate Domain Module for Domain Adaptive Person Re-ID — oral | ICCV 2021
- Yongxing Dai, Jun Liu, Yifan Sun, **Zekun Tong**, Chi Zhang, Lingyu Duan

Generalizable Person Re-identification with Relevance-aware Mixture of Experts — poster | CVPR 2021
- Yongxing Dai, Xiaotong Li, Jun Liu, **Zekun Tong**, Ling-yu Duan

Campus3D: A Photogrammetry Point Cloud Benchmark for Hierarchical Understanding of Outdoor Scene — oral | ACM MM 2020
- Xinke Li, Chongshou Li, **Zekun Tong**, Andrew Lim, Junsong Yuan, Yuwei Wu, Jing Tang, Raymond Huang

Spatio-temporal Data Mining

Predicting Parking Availability in Singapore with Cross-Domain Data A New Dataset and A Data-Driven Approach — poster | IJCAI 2024
- Huaiwu Zhang, Yutong Xia, Siru Zhong, Kun Wang, **Zekun Tong**, Qingsong Wen, Roger Zimmermann, Yuxuan Liang

Modeling Trajectories with Neural Ordinary Differential Equations — poster | IJCAI 2021
- Yuxuan Liang, Kun Ouyang, Hanshu Yan, Yiwei Wang, **Zekun Tong**, Roger Zimmermann

Fine-Grained Urban Flow Inference — journal | TKDE 2020
- Kun Ouyang, Yuxuan Liang, Ye Liu, **Zekun Tong**, Sijie Ruan, Yu Zheng, David S. Rosenblum

Projects

Campus3D | *A large-scale 3D point cloud dataset of NUS campus* Jan. 2019 – May. 2020

- Collaborated to annotate point cloud data and propose an effective framework for Hierarchical Learning.
- Implemented DGCNN with proposed framework using PyTorch to obtain fine-grained hierarchical labels.
- Developed project website, including dataset downloads, visualization, benchmark, etc. The homepage is here.

IPPT Trainer | *An application for recording fitness tests using body posture recognition* Jul. 2018 – Dec. 2018

- Co-developed with Singapore Ministry of Defence to monitor fitness training automatically. See demo at here.
- Collaborated to design real-time push- & sit-ups counting algo using keypoints detection based on OpenPose.
- Implemented low-latency image streaming module using WebRTC to reduce the computing load on edge phones.

Patents

An Anti-motion Sickness Seat and a balancing method | *China Invention Grant (ZL201510300557.1)* Sept. 2017
An Image Stabilization and Service Software for Ships | *China Software Copyright (2016SR047532)* May. 2016
An Anti-motion Sickness Seat | *China Utility Mode (ZL201520377894.6)* Oct. 2015
An Inflatable Adjustable Protective Cover | *China Utility Model (ZL201220750284.2)* Jul. 2013
An Earbud that Pauses and Plays Music Automatically | *China Utility Model (ZL201220750298.4)* Jul. 2013

Awards

Finalist Winner of Interdisciplinary Contest in Modeling (MCM/ICM) | *winning rate: 0.3%* Mar. 2016
Third Prize in "Challenge Cup" National Science and Technology Innovation Contest Nov. 2015
First Prize in Microsoft Imagine Cup (Shaanxi) May. 2017
Silver Medal in Shaanxi in National College Students Entrepreneurship Competition Jun. 2016

Honors

Research Scholarship at NUS 2018 - 2022
Graduate Star of Xidian University (10 out of 5357 graduates) Jun. 2018
Huawei Scholarship (two times) 2017, 2018
National Scholarship Oct. 2017
National Scholarship for Encouragement Oct. 2016
China Aerospace Science and Technology Corporation (CASC) Scholarship Apr. 2016

Professional Activities

Conference PC member: ICLR'22, NeurIPS'22'21, ICML'21, CVPR'21, etc.
Journal reviewer: IEEE TPAMI.

Programming Skills

Languages: Python, C/C++, Matlab, Solidity, Rust, R, Java, SQL, LaTeX, JavaScript, HTML/CSS and others.
Frameworks: PyTorch, Keras, TensorFlow, React, Node.js and others.