

Zheng Dong

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Department of Computer Science and Engineering

Southern University of Science and Technology (SUSTech)

Location: Shenzhen, China

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Google Scholar: [\[link\]](#)

GitHub: github.com/XDZhelheim

RESEARCH INTERESTS

Deep Learning, Multivariate Time Series,
Spatial-Temporal Data Mining, Urban Computing

EDUCATION

Southern University of Science and Technology

Shenzhen, China

M.S. student in *Electronic Science and Technology*

Sept. 2022 – Present

Supervisor: Prof. Xuan Song, Prof. Renhe Jiang

GPA: 3.45/4.00

Southern University of Science and Technology

Shenzhen, China

B.E. in *Computer Science and Technology*

Sept. 2018 – July 2022

Supervisor: Prof. Xuan Song, Dr. Qunjun Chen

GPA: 3.79/4.00

PUBLICATIONS

Notations: *Equal Contribution, [†]Corresponding Author

- [1] **Zheng Dong**^{*}, Renhe Jiang^{*}, Haotian Gao, Hangchen Liu, Jinliang Deng, Qingsong Wen, and Xuan Song[†]. 2024. Heterogeneity-Informed Meta-Parameter Learning for Spatiotemporal Time Series Forecasting. *In Proceedings of the 30th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*.
- [2] Haotian Gao, Renhe Jiang[†], **Zheng Dong**, Jinliang Deng, Yuxin Ma, and Xuan Song. 2024. Spatial-Temporal-Decoupled Masked Pre-training for Spatiotemporal Forecasting. *In Proc. of the 33rd International Joint Conference on Artificial Intelligence (IJCAI)*.
- [3] Hangchen Liu^{*}, **Zheng Dong**^{*}, Renhe Jiang[†], Jiewen Deng, Jinliang Deng, Qunjun Chen, and Xuan Song[†]. 2023. STAEformer: Spatio-Temporal Adaptive Embedding Makes Vanilla Transformer SOTA for Traffic Forecasting. *In Proceedings of the 32nd ACM International Conference on Information and Knowledge Management (CIKM)*.
- [4] Huanchen Wang^{*}, Qunjun Chen^{*}, **Zheng Dong**, Xuan Song, Hao Tian, Donglong Yang, and Manxia Liu. 2022. A Geomagnetic Sensor Dataset for Traffic Flow Prediction. *In Proceedings of 2022 IEEE International Conference on Big Data (BigData)*.
- [5] **Zheng Dong**, Qunjun Chen[†], Renhe Jiang[†], Huanchen Wang, Xuan Song, and Hao Tian. 2022. Learning Latent Road Correlations from Trajectories. *In Proceedings of 2022 IEEE International Conference on Big Data (BigData)*.

HONORS AND SCHOLARSHIPS	SUSTech Outstanding Student Teaching Assistant	Jan. 2024
	HUAWEI AI Education Base Scholarship	Apr. 2023
	SUSTech Merit Student Scholarship	Nov. 2021
	SUSTech Merit Student Scholarship	Nov. 2020
RESEARCH EXPERIENCE	SUSTech-UTokyo Joint Research Center on Super Smart Cities	
	<i>Postgraduate Researcher</i>	Sept. 2022 – Present
	Research Topics: Spatiotemporal Forecasting, Spatiotemporal Heterogeneity	
	▷ Torch-MTS : github.com/XDZhelheim/Torch-MTS A simple PyTorch benchmark platform for multivariate time series forecasting. It supports 17 popular datasets and 24 forecasting models in the latest version.	
	▷ STAEformer [3]: github.com/XDZhelheim/STAEformer arXiv:2308.10425 A simple yet effective baseline for spatiotemporal forecasting. The proposed novel Spatio-Temporal Adaptive Embedding (STAE) can effectively capture the inherent spatiotemporal relations, achieving SOTA performance with vanilla Transformer layers. Paper published in CIKM 2023.	
	▷ HimNet [1]: github.com/XDZhelheim/HimNet arXiv:2405.10800 Proposes a novel Heterogeneity-Informed Meta-Parameter Learning scheme. It not only captures but explicitly leverages the spatiotemporal heterogeneity to dynamically learn model parameters on each input, thus enhancing the adaptability. The forecasting model HimNet achieves SOTA performance while exhibiting superior interpretability. Paper published in KDD 2024.	
	<i>Undergraduate Researcher</i>	Sept. 2020 – Aug. 2022
	Research Topics: GPS Trajectory Data Analysis and Visualization	
TEACHING EXPERIENCE	▷ [5]: Proposes a novel trajectory-based road network representation learning framework. It learns dynamic route choice through trajectories to build a latent correlation graph for traffic-related applications. Paper published in IEEE BigData 2022.	
	Department of Computer Science and Engineering, SUSTech	
	<i>Teaching Assistant</i>	
	CS305: Computer Network	Fall 2023
	CS305: Computer Network	Spring 2023
	CS109: Introduction to Computer Programming	Fall 2022
	CS307: Principles of Database Systems	Spring 2022
	CS305: Computer Network	Fall 2021
SKILLS	Programming	
	Proficient in: Python deep learning (PyTorch/NumPy/Matplotlib)	
	Other skills: Linux, Git, \LaTeX , Java, C++	
	Languages	
	Chinese (native), English (CET-4: 604, CET-6: 626, TOEFL: 103)	