Wei Zeng, Ph.D.

weizeng@hkust-gz.edu.cn zeng-wei.com

1 Duxue Road, Nansha District, Guangzhou City, Guangdong Province, 511458

Research Statement

Research Interests Visualization, Visual Analytics, AR/VR, Human-AI Interaction, AIGC.

Personality Hardworking, creative, and well-motivated for high-quality research.

Career Objective To develop interactive visualizations that promote the interplay between humans, machines, and big data.

Education

2011 – 2015 **Ph.D., Computer Engineering** in Nanyang Technological University, Singapore
Thesis title: *Visual Analytics for Massive Urban Public Transport Data*
Supervisors: *Prof. Chi-Wing (Philip) Fu*, and *Dr. Stefan Müller Arisona*

2007 – 2011 **B.E., Computer Engineering** in Nanyang Technological University, Singapore
Second Upper Class Honor.

Work Experience

2021.11 – Present **Assistant Professor,** Thrust of Computational Media & Arts, The Hong Kong University of Science and Technology (Guangzhou).

Assistant Professor, Thrust of Data Science & Analytics, The Hong Kong University of Science and Technology (Guangzhou).

Affiliated Assistant Professor, Department of Computer Science and Technology, The Hong Kong University of Science and Technology.

2018.03 – 2021.10 **Associate Professor,** Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences.

Spring term, 2020 & 2021 **Adjunct Associate Professor,** BNU-HKBU United International College (UIC).

2017.06 – 2018.02 **Senior Researcher,** Future Cities Laboratory, Singapore-ETH Centre, ETH Zurich.

2015.03 – 2017.05 **PostDoc Researcher,** Future Cities Laboratory, Singapore-ETH Centre, ETH Zurich.

2013.06 – 2013.08 **Visiting Scientist,** Chair of Information Architecture, ETH Zurich.

Research Publications

I publish mainly in visualization journals and conferences, among which *IEEE TVCG (Proc. IEEE VIS)* ×19, *ACM CHI* ×8, and *CGF (Proc. EuroVis)* ×5 are the premiere venues.
Summary: CCF A/B (42), IEEE/ACM Transactions (27), Best Papers (5)
*Corresponding author, Students/RAs under my supervision

Journal Articles

1 Jian Yu, Zhan Wang, Yifan Cao, Hao Cui, and **Wei Zeng***, "Centennial drama reimagined: An immersive experience of intangible cultural heritage through contextual storytelling in virtual reality," *ACM Journal on Computing and Cultural Heritage*, vol. 18, no. 1, Article No.: 11, Pages 1–22, 2025. DOI: 10.1145/3705613.

2. Jianing Hao, Manling Yang, Qing Shi, Yuzhe Jiang, Guang Zhang, and **Wei Zeng***, "FinFlier: Automating graphical overlays for financial visualizations with knowledge-grounding large language model," *IEEE Transactions on Visualization and Computer Graphics*, 2025, Accepted. DOI: 10.1109/TVCG.2024.3514138.

3. Liangwei Wang, Zhan Wang, Shishi Xiao, Le Liu, Fugee Tsung, and **Wei Zeng***, "VizTA: Enhancing comprehension of distributional visualization with visual-lexical fused conversational interface," *Computer Graphics Forum (Proc. EuroVis'25)*, 2025, Accepted.

4. Liangwei Wang, Zhan Wang, Xi Zhao, Fugee Tsung, and **Wei Zeng***, "Antarctica storytelling: Creating interactive story maps for polar regions with graphic-based approach," *The Visual Computer*, vol. 41, no. 4, pp. 2157–2169, 2025. DOI: 10.1007/s00371-024-03489-x.

5. Manling Yang, Yihan Hou, Ling Li, Remco Chang, and **Wei Zeng***, "Dashboard vision: Using eye-tracking to understand and predict dashboard viewing behaviors," *IEEE Transactions on Visualization and Computer Graphics*, 2025, Accepted. DOI: 10.1109/TVCG.2025.3532497.

6. Xingchen Zeng, Haichuan Lin, Yilin Ye, and **Wei Zeng***, "Advancing multimodal large language models in chart question answering with visualization-referenced instruction tuning," *IEEE Transactions on Visualization and Computer Graphics (Proc. IEEE VIS'24)*, vol. 31, no. 1, pp. 525–535, 2025. DOI: 10.1109/TVCG.2024.3456159.

7. Yilin Ye, Rong Huang, Kang Zhang, and **Wei Zeng***, "Unified visual comparison framework for human and AI paintings using neural embeddings and computational aesthetics," *IEEE Computer Graphics & Applications*, 2025, Accepted.

8. Yilin Ye, Shishi Xiao, Xingchen Zeng, and **Wei Zeng***, "ModalChorus: Visual probing and alignment of multi-modal embeddings via modal fusion map," *IEEE Transactions on Visualization and Computer Graphics (Proc. IEEE VIS'24)*, vol. 31, no. 1, pp. 294–304, 2025. DOI: 10.1109/TVCG.2024.3456387.

9. Jianing Hao, Qing Shi, Yilin Ye, and **Wei Zeng***, "TimeTuner: Diagnosing time representations for time-series forecasting with counterfactual explanations," *IEEE Transactions on Visualization and Computer Graphics (Proc. IEEE VIS'23)*, vol. 30, no. 1, pp. 1183–1193, 2024. DOI: 10.1109/TVCG.2023.3327389.

10. Qiaomu Shen, Chaozu Zhang, Xiao Yan, Chuan Yang, Dan Zeng, **Wei Zeng**, and Bo Tang, "CheetahTraj: Efficient visualization for large trajectory dataset with quality guarantee," *IEEE Transactions on Knowledge and Data Engineering*, vol. 36, no. 11, pp. 5737–5752, 2024. DOI: 10.1109/TKDE.2024.3387480.

11. Shishi Xiao, Qing Shi, Lingdan Shao, Bo Du, Yang Wang, Qiaomu Shen, and **Wei Zeng***, "MetroBUX: A topology-based visual analytics for bus operational uncertainty exploration," *IEEE Transactions on Intelligent Transportation Systems*, vol. 25, no. 6, pp. 5525–5538, 2024. DOI: 10.1109/TITS.2023.3338700.

12. Shishi Xiao, Suizi Huang, Yue Lin, Yilin Ye, and **Wei Zeng***, "Let the chart spark: Embedding semantic context into chart with generative model," *IEEE Transactions on Visualization and Computer Graphics (Proc. IEEE VIS'23)*, vol. 30, no. 1, pp. 284–294, 2024. DOI: 10.1109/TVCG.2023.3326913.

13. **Wei Zeng***, Xi Chen, Yihan Hou, Lingdan Shao, Zhe Chu, and Remco Chang, "Semi-automatic layout adaptation for responsive multiple-view visualization design," *IEEE Transactions on Visualization and Computer Graphics*, vol. 30, no. 7, pp. 3798–3812, 2024. DOI: 10.1109/TVCG.2023.3240356.

14. Yifan Cao, Qing Shi, Lue Shen, Kani Chen, Yang Wang, **Wei Zeng***, and Huamin Qu, "NFTracer: Tracing nft impact dynamics in transaction-flow substitutive systems with visual analytics," *IEEE Transactions on Visualization and Computer Graphics*, 2024, Accepted. DOI: 10.1109/tvcg.2024.3402834.

15. Yilin Ye, Jianing Hao, Yihan Hou, Zhan Wang, Shishi Xiao, Yuyu Luo, and **Wei Zeng***, "Generative AI for visualization: State of the art and future directions," *Visual Informatics*, vol. 8, no. 2, pp. 43–66, 2024. DOI: 10.1016/j.visinf.2024.04.003.

16 Yilin Ye, Qian Zhu, Shishi Xiao, Kang Zhang, and **Wei Zeng***, "The contemporary art of image search: Iterative user intent expansion via vision-language model," *Proceedings of the ACM on Human-Computer Interaction*, vol. 8, no. CSCW1, Article No.: 180, Pages 1–31, 2024. DOI: 10.1145/3641019.

17 Yilin Ye, Rong Huang, and **Wei Zeng***, "VISAtlas: An image-based exploration and query system for large visualization collections via neural image embedding," *IEEE Transactions on Visualization and Computer Graphics*, vol. 30, no. 7, pp. 3224–3240, 2024. DOI: 10.1109/tvcg.2022.3229023.

18 Zezheng Feng, Fang Zhu, Hongjun Wang, Jianing Hao, Shuang-Hua Yang, **Wei Zeng**, and Huamin Qu, "HoLens: A visual analytics design for higher-order movement modeling and visualization," *Computational Visual Media*, vol. 10, pp. 1079–1100, 2024. DOI: 10.1007/s41095-023-0392-y.

19 Shidong Wang, **Wei Zeng***, Xi Chen, Yu Ye, Yu Qiao, and Chi-Wing Fu, "ActFloor-GAN: Activity-guided adversarial networks for human-centric floorplan design," *IEEE Transactions on Visualization and Computer Graphics*, vol. 29, no. 3, pp. 1610–1624, 2023. DOI: 10.1109/TVCG.2021.3126478.

20 Shihui Guo, Yubin Shi, Pintong Xiao, Yinan Fu, Juncong Lin, **Wei Zeng**, and Tong-Yee Lee, "Creative and progressive interior color design with eye-tracked user preference," *ACM Transactions on Computer-Human Interaction*, vol. 30, no. 1, Article No.: 5, Pages 1–31, 2023. DOI: 10.1145/3542922.

21 Shishi Xiao, Yihan Hou, Cheng Jin, and **Wei Zeng***, "WYTIWYR: A user intent-aware framework with multi-modal inputs for visualization retrieval," *Computer Graphics Forum (Proc. EuroVis'23)*, vol. 42, no. 3, pp. 311–322, 2023. DOI: 10.1111/cgf.14832.

22 **Wei Zeng**, Chengqiao Lin, Kang Liu, Juncong Lin, and Anthony K. H. Tung, "Modeling spatial nonstationarity via deformable convolutions for deep traffic flow prediction," *IEEE Transactions on Knowledge and Data Engineering*, vol. 35, no. 3, pp. 2796–2808, 2023. DOI: 10.1109/TKDE.2021.3112977.

23 Zhen Wen, **Wei Zeng***, Luoxuan Weng, Yihan Liu, Mingliang Xu, and Wei Chen*, "Effects of view layout on situated analytics for multiple representations in immersive visualization," *IEEE Transactions on Visualization and Computer Graphics (Proc. IEEE VIS'22)*, vol. 29, no. 1, pp. 440–450, 2023. DOI: 10.1109/TVCG.2022.3209475.

24 Jincheng Jiang, Wei Tu, Hui Kong, **Wei Zeng**, Rui Zhang, and Milan Konecny, "Large-scale urban multiple-modal transport evacuation model for mass gathering events considering pedestrian and public transit system," *IEEE Transactions on Intelligent Transportation Systems*, vol. 23, no. 12, pp. 23 059–23 069, 2022. DOI: 10.1109/TITS.2022.3198178.

25 Linping Yuan, **Wei Zeng***, Siwei Fu, Zhiliang Zeng, Haotian Li, Chi-Wing Fu, and Huamin Qu, "Deep colormap extraction from visualizations," *IEEE Transactions on Visualization and Computer Graphics*, vol. 28, no. 12, pp. 4048–4060, 2022. DOI: 10.1109/TVCG.2021.3070876.

26 Yanna Lin, **Wei Zeng***, Yu Ye, and Huamin Qu, "Saliency-aware color harmony models for outdoor signboard," *Computers & Graphics*, vol. 105, pp. 25–35, 2022. DOI: 10.1016/j.cag.2022.04.012.

27 Chi Zhang, **Wei Zeng***, and Ligang Liu, "UrbanVR: An immersive analytics system for context-aware urban design," *Computers & Graphics*, vol. 99, pp. 128–138, 2021. DOI: 10.1016/j.cag.2021.07.006.

28 Jiacheng Pan, Wei Chen, Xiaodong Zhao, Shuyue Zhou, **Wei Zeng**, Minfeng Zhu, Jian Chen, Siwei Fu, and Yingcai Wu, "Exemplar-based layout fine-tuning for node-link diagrams," *IEEE Transactions on Visualization and Computer Graphics (Proc. IEEE VIS'20)*, vol. 27, no. 2, pp. 1655–1665, 2021. DOI: 10.1109/TVCG.2020.3030393.

29 Lingdan Shao, Zhe Chu, Chen, Xi, Lin, Yanna, and **Wei Zeng***, "Modeling layout design for multiple-view visualization via bayesian inference," *Journal of Visualization (Proc. ChinaVis'21)*, vol. 24, no. 6, pp. 1237–1252, 2021, **ChinaVis'21 Best Paper Honorable Mention Award**. DOI: 10.1007/s12650-021-00781-z.

30 Mengyang Wu, **Wei Zeng***, and Chi-Wing Fu, "FloorLevel-Net: Recognizing floor-level lines with height-attention-guided multi-task learning," *IEEE Transactions on Image Processing*, vol. 30, pp. 6686–6699, 2021. DOI: 10.1109/TIP.2021.3096090.

31 **Wei Zeng**, Ao Dong, Xi Chen, and Zhang-lin Cheng, "VIStory: Interactive storyboard for exploring visual information in scientific publications," *Journal of Visualization*, vol. 24, no. 1, pp. 69–84, 2021. DOI: 10.1007/s12650-020-00688-1.

32 **Wei Zeng**, Chengqiao Lin, Juncong Lin, Jincheng Jiang, Jiazhi Xia, Cagatay Turkay, and Wei Chen, "Revisiting the modifiable areal unit problem in deep traffic prediction with visual analytics," *IEEE Transactions on Visualization and Computer Graphics (Proc. IEEE VIS'20)*, vol. 27, no. 2, pp. 839–848, 2021. DOI: 10.1109/TVCG.2020.3030410.

33 Xi Chen, **Wei Zeng***, Yanna Lin, Hayder Mahdi Al-maneea, Jonathan Roberts, and Remco Chang, "Composition and configuration patterns in multiple-view visualizations," *IEEE Transactions on Visualization and Computer Graphics (Proc. IEEE VIS'20)*, vol. 27, no. 2, pp. 1514–1524, 2021. DOI: 10.1109/TVCG.2020.3030338.

34 Zezheng Feng, Haotian Li, **Wei Zeng***, Shuang-Hua Yang, and Huamin Qu, "Topology density map for urban data visualization and analysis," *IEEE Transactions on Visualization and Computer Graphics (Proc. IEEE VIS'20)*, vol. 27, no. 2, pp. 828–838, 2021. DOI: 10.1109/TVCG.2020.3030469.

35 Zhiliang Zeng, Mengyang Wu, **Wei Zeng***, and Chi-Wing Fu, "Deep recognition of vanishing-point-constrained building planes in urban street views," *IEEE Transactions on Image Processing*, vol. 29, pp. 5912–5923, 2020. DOI: 10.1109/TIP.2020.2986894.

36 Zhutian Chen, **Wei Zeng***, Zhiguang Yang, Lingyun Yu, Chi-Wing Fu, and Huamin Qu, "LassoNet: Deep lasso-selection of 3d point clouds," *IEEE Transactions on Visualization and Computer Graphics (Proc. IEEE VIS'19)*, vol. 26, no. 1, pp. 195–204, 2020. DOI: 10.1109/TVCG.2019.2934332.

37 **Wei Zeng**, Qiaomu Shen, Yuzhe Jiang, and Alex Telea, "Route-aware edge bundling for visualizing origin-destination trails in urban traffic," *Computer Graphics Forum (Proc. EuroVis'19)*, vol. 38, no. 3, pp. 581–593, 2019. DOI: 10.1111/cgf.13712.

38 Yu Ye, Daniel Richards, Yi Lu, Xiaoping Song, Yu Zhuang, **Wei Zeng**, and Teng Zhong, "Measuring daily accessed street greenery: A human-scale approach for informing better urban planning practices," *Landscape and Urban Planning*, vol. 191, p. 103 434, 2019. DOI: 10.1016/j.landurbplan.2018.08.028.

39 Yu Ye, **Wei Zeng***, Qiaomu Shen, Xiaohu Zhang, and Yi Lu, "The visual quality of streets: A human-centred continuous measurement based on machine learning algorithms and street view images," *Environment and Planning B: Urban Analytics and City Science*, vol. 46, no. 8, pp. 1439–1457, 2019. DOI: 10.1177/2399808319828734.

40 Qiaomu Shen, **Wei Zeng***, Yu Ye, Stefan Mueller Arisona, Simon Schubiger, Remo Burkhard, and Huamin Qu, "StreetVizor: Visual exploration of human-scale urban forms based on street views," *IEEE Transactions on Visualization and Computer Graphics (Proc. IEEE VIS'17)*, vol. 24, no. 1, pp. 1004–1013, 2018. DOI: 10.1109/TVCG.2017.2744159.

41 **Wei Zeng** and Yu Ye, "VitalVizor: A visual analytics system for studying urban vitality," *IEEE Computer Graphics and Applications*, vol. 38, no. 5, pp. 38–53, 2018. DOI: 10.1109/MCG.2018.053491730.

42 **Wei Zeng**, Chi-Wing Fu, Stefan Müller Arisona, Simon Schubiger, Remo Burkhard, and Kwan-Liu Ma, "A visual analytics design for studying rhythm patterns from human daily movement data," *Visual Informatics*, vol. 1, no. 2, pp. 81–91, 2017. DOI: 10.1016/j.visinf.2017.07.001.

43 **Wei Zeng**, Chi-Wing Fu, Stefan Müller Arisona, Simon Schubiger, Remo Burkhard, and Kwan-Liu Ma, "Visualizing the relationship between human mobility and points-of-interest," *IEEE Transactions on Intelligent Transportation Systems*, vol. 18, no. 8, pp. 2271–2284, 2017. DOI: 10.1109/TITS.2016.2639320.

44 **Wei Zeng**, Chi-Wing Fu, Stefan Müller Arisona, Alex Erath, and Huamin Qu, "Visualizing waypoints-constrained origin-destination patterns for massive transportation data," *Computer Graphics Forum*, vol. 35, no. 8, pp. 95–107, 2016. DOI: 10.1111/cgf.12778.

45 Afian Anwar, **Wei Zeng**, and Stefan Müller Arisona, "The time space diagram revisited," *Transportation Research Record: Journal of the Transportation Research Board*, vol. 14, no. 1046, 2014. DOI: 10.3141/2442-01.

46 **Wei Zeng**, Chi-Wing Fu, Stefan Müller Arisona, Alexander Erath, and Huamin Qu, "Visualizing mobility of public transportation system," *IEEE Transactions on Visualization and Computer Graphics (Proc. IEEE VIS'14)*, vol. 20, no. 12, pp. 1833–1842, 2014. DOI: 10.1109/TVCG.2014.2346893.

47 **Wei Zeng**, Xianfeng Huang, Stefan Müller Arisona, and Ian Vince McLoughlin, "Classifying watermelon ripeness by analysing acoustic signals using mobile devices," *Personal and Ubiquitous Computing*, vol. 18, no. 7, pp. 1753–1762, 2014. DOI: 10.1007/s00779-013-0706-7.

48 **Wei Zeng**, Chi-Wing Fu, Stefan Müller Arisona, and Huamin Qu, "Visualizing interchange patterns in massive movement data," *Computer Graphics Forum (Proc. EuroVis'13)*, vol. 32, no. 3pt3, pp. 271–280, 2013. DOI: 10.1111/cgf.12114.

49 Ian Vince McLoughlin, I Komang Narendra, Leong Hai Koh, Quang Huy Nguyen, Bharath Seshadri, **Wei Zeng**, and Chang Yao, "Campus mobility for the future: The electric bicycle," *Journal of Transportation Technologies*, vol. 2, no. 1, pp. 1–12, 2012. DOI: 10.4236/jtts.2012.21001.

Conference Proceedings

1 Haichuan Lin, Yilin Ye, Jiazhi Xia, and **Wei Zeng**, "SketchFlex: Facilitating spatial-semantic coherence in text-to-image generation with region-based sketches," in *Proceedings of ACM CHI Conference on Human Factors in Computing Systems*, **Best Paper Honorable Mention Award**, 2025. DOI: 10.1145/3706598.3713801.

2 Yihan Hou, Xingchen Zeng, Yusong Wang, Manling Yang, Xiaojiao Chen, and **Wei Zeng**⋆, "GenColor: Generative color-concept association in visual design," in *Proceedings of ACM CHI Conference on Human Factors in Computing Systems*, 2025. DOI: 10.1145/3706598.3713418.

3 Kaichen Nie, Hanning Shao, Yuchu Luo, Min Tian, Hao Wu, **Wei Zeng**, Xin Fu, and Xiaoru Yuan, "A-map: Interactive visual exploration of intercity accessibility dynamics based on railway network data," in *Proceedings of IEEE Pacific Visualization Conference (Proc. IEEE PacificVis'17)*, 2024, pp. 289–294. DOI: 10.1109/PacificVis60374.2024.00040.

4 Ling Li, Yu Ye, Bingchuan Jiang, and **Wei Zeng**, "GeoReasoner: Geo-localization with reasoning in street views using a large vision-language model," in *Proceedings of The International Conference on Machine Learning (Proc. ICML'24)*, 2024, pp. 29 222–29 233.

5 Linping Yuan, Boyu Li, Jindong Wang, Huamin Qu, and **Wei Zeng**⋆, "Generating virtual reality stroke gesture data from out-of-distribution desktop stroke gesture data," in *Proceedings of IEEE Conference on Virtual Reality and 3D User Interfaces (Proc. IEEE VR'24)*, 2024, pp. 732–742. DOI: 10.1109/VR58804.2024.00093.

6 Qian Zhu, Zhuo Wang, **Wei Zeng**⋆, Wai Tong, Weiyue Lin, and Xiaojuan Ma, ""Make interaction situated": Designing user acceptable interaction for situated visualization in public environments," in *Proceedings of ACM CHI Conference on Human Factors in Computing Systems (Proc. ACM CHI'24)*, 2024, Article No.: 196, Pages 1–21. DOI: 10.1145/3613904.3642049.

7 Rong Huang, Haichuan Lin, Chuanzhang Chen, Kang Zhang, and **Wei Zeng**⋆, "PlantoGraphy: Incoporating iterative design process into generative artificial intelligence for landscape rendering," in *Proceedings of ACM CHI Conference on Human Factors in Computing Systems (Proc. ACM CHI'24)*, 2024, Article No.: 168, Pages 1–19. DOI: 10.1145/3613904.3642824.

8 Shishi Xiao, Liangwei Wang, Xiaojuan Ma, and **Wei Zeng***, "TypeDance: Creating semantic typographic logos from image through personalized generation," in *Proceedings of ACM CHI Conference on Human Factors in Computing Systems (Proc. ACM CHI'24)*, 2024, Article No.: 175, Pages 1–18. DOI: 10.1145/3613904.3642185.

9 Xingchen Zeng, Ziyao Gao, Yilin Ye, and **Wei Zeng***, "IntentTuner: An interactive framework for integrating human intentions in fine-tuning text-to-image generative models," in *Proceedings of ACM CHI Conference on Human Factors in Computing Systems (Proc. ACM CHI'24)*, 2024, Article No.: 182, Pages 1–18. DOI: 10.1145/3613904.3642165.

10 Yihan Hou, Hao Cui, Rongrong Chen, and **Wei Zeng***, "Understanding the impact of referent design on scale perception in immersive data visualization," in *Proceedings of ACM CHI Conference on Human Factors in Computing Systems (Proc. ACM CHI LBW'24)*, 2024, Article No.: 354, Pages 1–7. DOI: 10.1145/3613905.3650783.

11 Yihan Hou, Manling Yang, Hao Cui, Lei Wang, Jie Xu, and **Wei Zeng***, "C2Ideas: Supporting creative interior color design ideation with a large language model," in *Proceedings of ACM CHI Conference on Human Factors in Computing Systems (Proc. ACM CHI'24)*, 2024, Article No.: 172, Pages 1–18. DOI: 10.1145/3613904.3642224.

12 Zhan Wang, Linping Yuan, Liangwei Wang, Bingchuan Jiang, and **Wei Zeng***, "VirtuWander: Enhancing multi-modal interaction for virtual tour guidance through large language models," in *Proceedings of ACM CHI Conference on Human Factors in Computing Systems (Proc. ACM CHI'24)*, 2024, Article No.: 612, Pages 1–20. DOI: 10.1145/3613904.3642235.

13 Ziyao Gao, Yiwen Zhang, Ling Li, Theodoros Papatheodorou, and **Wei Zeng***, "AI-rays: Exploring bias in the gaze of AI through a multimodal interactive installation," in *Proceedings of SIGGRAPH Asia 2024 Art Papers*, 2024, Article No.: 1, Pages 1 –7. DOI: 10.1145/3680530.3695433.

14 Jianing Hao, Xibin Jiang, Qing Shi, and **Wei Zeng***, "Does where you are matter? a visual analytics system for covid-19 transmission based on social hierarchical perspective," in *Proceedings of The 16th International Symposium on Visual Information Communication and Interaction (Proc. VINCI'23)*, 2023, Article No.: 6, Pages 1–5. DOI: 10.1145/3615522.3615528.

15 Liangwei Wang, Zhan Wang, Xi Zhao, and **Wei Zeng***, "Storytelling in frozen frontier: Exploring graphic-based approach for creating interactive story maps in antarctica," in *Proceedings of The 16th International Symposium on Visual Information Communication and Interaction (Proc. VINCI'23)*, **Best Paper Award**, 2023, Article No.: 2, Pages 1–8. DOI: 10.1145/3615522.3615524.

16 Shihan Fu, Liangliang Qiang, and **Wei Zeng***, "Loop meditation: Enhancing novice's vr meditation experience with physical movement," in *Proceedings of The 16th International Symposium on Visual Information Communication and Interaction (Proc. VINCI'23)*, 2023, Article No.: 16, Pages 1 –5. DOI: 10.1145/3615522.3615538.

17 Yifan Cao, Meng Xia, Kento Shigyo, Furui Cheng, Qianhang Yu, Xingxing Yang, Yang Wang, **Wei Zeng***, and Huamin Qu, "NFTeller: Dual-centric visual analytics for assessing market performance of nft collectibles," in *Proceedings of The 16th International Symposium on Visual Information Communication and Interaction (Proc. VINCI'23)*, 2023, Article No.: 20, Pages 1 –8. DOI: 10.1145/3615522.3615578.

18 Yihan Chen, Yilin Ye, and **Wei Zeng***, "The rich, the poor, and the ugly: An aesthetic-perspective assessment of nft values," in *Proceedings of The 16th International Symposium on Visual Information Communication and Interaction (Proc. VINCI'23)*, 2023, Article No.: 23, Pages 1 –8. DOI: 10.1145/3615522.3615545.

19 Qiaomu Shen, Yanhong Wu, Yuzhe Jiang, **Wei Zeng**, Alexis K H Lau, Anna Vianova, and Huamin Qu, "Visual interpretation of recurrent neural network on multi-dimensional time-series forecast," in *Proceedings of IEEE PacificVis*, 2020, pp. 61–70. DOI: 10.1109/PacificVis48177.2020.2785.

20 Zengyang Gong, Bo Du, Zhidan Liu, **Wei Zeng**, Pascal Perez, and Kaishun Wu, "SD-seq2seq: A deep learning model for bus bunching prediction based on smart card data," in *Proceedings of International Conference on Computer Communications and Networks (Proc. ICCCN'20)*, 2020, pp. 1–9. DOI: 10.1109/ICCCN49398.2020.9209686.

21 Ao Dong, **Wei Zeng**⋆, Xi Chen, and Zhanglin Cheng, "VIStory: Interactive storyboard for exploring visual information in scientific publications," in *Proceedings of the 12th International Symposium on Visual Information Communication and Interaction (Proc. VINCI'19)*, **Best Paper Award**, 2019, Article No.: 12, Pages 1–8. DOI: 10.1145/3356422.3356430.

22 Aurel von Richthofen, **Wei Zeng**, Shiho Asada, Remo Burkhard, Felix Heisel, Stefan Mueller Arisona, and Simon Schubiger, "Urban mining: Visualizing the availability of construction materials for re-use in future cities," in *Proceedings of 21st International Conference on Information Visualisation*, 2017, pp. 306–311. DOI: 10.1109/iV.2017.34.

23 Jan Perhac, **Wei Zeng**, Shiho Asada, Remo Burkhard, Stefan Mueller Arisona, Simon Schubiger, and Berhard Klein, "Urban fusion: Visualizing urban data fused with social feeds via a game engine," in *Proceedings of 21st International Conference on Information Visualisation*, **Best Paper Award**, 2017, pp. 312–317. DOI: 10.1109/iV.2017.33.

24 **Wei Zeng**, Chi-Wing Fu, Stefan Müller Arisona, Simon Schubiger, Remo Burkhard, and Kwan-Liu Ma, "A visual analytics design for studying crowd movement rhythms from public transportation data," in *Proceedings of ACM SIGGRAPH ASIA 2016 Symposium on Visualization*, 2016, Article No.: 4, Pages 1–8. DOI: 10.1145/3002151.3002152.

25 **Wei Zeng**, Chen Zhong, Afian Anwar, Stefan Müller Arisona, and Ian Vince McLoughlin, "MetroBuzz: Interactive 3D visualization of spatiotemporal data," in *Proceedings of the 1st International Conference on Computer & Information Science*, 2012, pp. 143–147. DOI: 10.1109/ICCISci.2012.6297228.

Books and Chapters

1 Yu Ye, Dan Qiang, and **Wei Zeng**⋆, "Form syntax 1.0: An analytical tool assisting urban design via the measuring of urban vitality," in *The Routledge Handbook of Urban Design Research Methods*, Routledge, 2023, pp. 524–534.

2 **Wei Zeng**, Jan Perhac, Shiho Asada, Simon Schubiger, Stefan Mueller Arisona, and Remo Burkhard, "Singapore views: A collaborative interactive visualisation and analysis framework for urban planning and design," in *FCL Indicia II*, S. Cairns and D. Tunas, Eds., Lars Müller Publishers, 2018.

3 Simon Schubiger, Stefan Müller Arisona, Chen Zhong, **Wei Zeng**, and Remo Burkhard, "Advanced tools and workflows for urban designers," in *FCL Indicia I*, S. Cairns and D. Tunas, Eds., Lars Müller Publishers, 2017, pp. 151–158, ISBN: 9783037785454.

4 **Wei Zeng** and Stefan Müller Arisona, "Visual analytics for urban public transport: Using visualizations to reveal the underlying movement patterns of urban public transport in singapore," in *FCL Magazine*, vol. 3, 2015, pp. 52–59.

5 Chen Zhong, Tao Wang, **Wei Zeng**, and Stefan Müller Arisona, "Spatiotemporal visualisation: A survey and outlook," in *Digital Urban Modeling and Simulation*, 1st ed., vol. 242, Springer, 2012, pp. 299–317. DOI: 10.1007/978-3-642-29758-8_16.

Teaching

Year 2024 – 2025
- DSAA 5024 Data Visualization and Exploration, HKUST(GZ), Fall 2024

Year 2023 – 2024
- HKUST(GZ) – CAA Joint Course, Summer 2023
- CMAA 5023 Programming for VR/AR , HKUST(GZ), Fall 2023

Teaching (continued)

	DSAA 5024 Data Visualization and Exploration, HKUST(GZ), Fall 2024
Year 2022 – 2023	CMAA 5023 Programming for VR/AR, HKUST(GZ), Spring 2023
	DSAA 5024 Data Visualization and Exploration, HKUST(GZ), Fall 2022
Year 2021 – 2022	DSAA 5024 Data Visualization and Exploration, HKUST(GZ), Spring 2022
	MSBD 5005 Data Visualization, BDT Program, HKUST, Spring 2022
Year 2020 – 2021	DS 4073 Introduction to Data Visualization (Undergraduate), UIC, Spring 2021
Year 2019 – 2020	DS 4073 Introduction to Data Visualization (Undergraduate), UIC, Spring 2020
	DS 7063 Advanced Data Visualization (Graduate), UIC, Spring 2020

Awards

Best Paper Honorable Mention, 2025	The ACM CHI conference on Human Factors in Computing Systems (ACM CHI'25)
Best Paper, 2023	The 16th International Symposium on Visual Information Communication and Interaction (VINCI'23)
Best Poster Honorable Mention, 2022	The 9th China Visualization and Visual Analytics Conference (ChinaVis'22)
Best Paper Honorable Mention, 2021	The 8th China Visualization and Visual Analytics Conference (ChinaVis'21)
Best Paper, 2019	The 12th International Symposium on Visual Information Communication and Interaction (VINCI'19)
Best Paper, 2017	The 21st International Conference on Information Visualization 2017 (IV'17)
SEC-NTU Ph.D. Funding	Ph.D. 2011-2015

Professional Experiences

Journal Editorial Board

Associate Editor	The Visual Computer, 2024 - present.
Editorial Board	Visual Informatics, 2024 - present.
Associate Editor	Journal of Big Data, 2023 - 2024.
Guest Editor	IEEE Computer Graphics & Applications, SI: Human-AI Interaction for Graphics and Visualization, 2025.
	IEEE Transactions on Computational Social Systems, SI: Augmenting Urban Brain with Visual and Social Intelligence, 2018.

Conference Organizing Chair

Program Co-Chair	The 16th International Symposium on Visual Information Communication and Interaction (VINCI'23)
Art Paper Co-Chair	The 17th International Symposium on Visual Information Communication and Interaction (VINCI'24)
Publicity Co-Chair	The 15th International Symposium on Visual Information Communication and Interaction (VINCI'22)

Professional Experiences (continued)

Forum Co-Chair
- ChinaVis International Forum, 2020 - 2023

Poster Co-Chair
- The 11th China Visualization and Visual Analytics Conference (ChinaVis'24)
- The 12th IEEE Pacific Visualization Symposium (PacificVis'19)

Conference Program Committee

Associate Chairs
- ACM CHI conference on Human Factors in Computing Systems (CHI'25), Design Subcommittee

Program Committee
- The IEEE Visualization Conference (IEEE VIS), 2021 - 2023
- Eurographics/IEEE-VGTC Symposium on Visualization (EuroVis) STARs, 2021 - 2022
- China Visualization and Visual Analytics Conference (ChinaVis), 2017 - 2023
- International Conference on Computational Visual Media (CVM), 2017 - 2023
- Computer Graphics International Conference (CGI), 2023 - 2024

Journal & Conference Reviewer

Journal
- IEEE Transactions on Visualization and Computer Graphics (IEEE TVCG), Computer Graphics Forum (CGF), IEEE Computer Graphics and Applications (IEEE CG&A), IEEE Transactions on Knowledge and Data Engineering (IEEE TKDE), IEEE Transactions on Intelligent Transportation Systems (IEEE TITS), IEEE Transactions on Computational Social Systems, IEEE Transactions on Network Science and Engineering, ACM Transactions on Intelligent Systems and Technology, ACM Transactions on Spatial Algorithms and Systems, Information Visualization, Journal of Visualization, Visual Informatics, Computer Aided Geometric Design, Computers & Graphics, Journal of Computational Social Science, Journal of Computer-Aided Design & Computer Graphics

Conference
- IEEE VIS, EuroVis, PacificVis, ChinaVis, SIGGRAPH (Asia), ACM CHI, IEEE VR, VINCI, ISMAR, EuroGraphics, CVM, IVAPP

Grant Reviewer

Grant
- National Natural Science Foundation of China (General), National Natural Science Foundation of China (Youth), Agencia National Research and Development Agency (ANID)

Invited Talks and Presentations

2024
- **Roadmap to MLLM for Visualization**, CSIG Young Scientists Conference, 2024.12.12, Hangzhou, Invited Talk.
- **Enhancing Creative Control over GenAI for Design**, Department of Computer Science and Engineering Seminar, The Chinese University of Hong Kong, 2024.11.22, Hong Kong, Invited Talk.
- **Multi-modal Models for Urban Cultural Heritage Preservation: Data, Models, and Interaction Design,** Digital Twin and Future Cities (DTFC) Conference, 2024.10.13, Nanning, Invited Talk.
- **Data Governance and Visualization: The Foundation of Data-Driven Artificial Intelligence**, CSIG - Advanced Training Program for Technical Managers in Intelligent Medical Imaging Diagnosis, 2024.08.21, Wuhan, Invited Talk.

Invited Talks and Presentations (continued)

- **Exploratory Data Analysis in the Era of Large Models: New Paradigms, Opportunities and Challenges**, CCF - Computer-Aided Design and Computer Graphics (CAD/CG) Conference, 2024.08.16, Nanchang, Invited Talk.
- **GeoIntelligence: Multimodal Large Language Model for Intelligent Interaction with Geospatial Data**, Information Engineering University, 2024.08.05, Zhengzhou, Invited Talk.
- **AIGC for Design**, Guangzhou Academy of Fine Arts, 2024.05.24, Guangzhou, Lecture.
- **Human-AI Collaboration for Data Governance and Information Design**, Tianjin University, 2024.04.11, Tianjin, Invited Talk.

2023

- **Human-AI Collaboration for Data Governance and Information Design**, Shandong University, 2023.11.15, Qingdao, Invited Talk.
- **Human-AI Collaboration for Data Governance and Information Design**, Shenzhen Institute of Advanced Technologies, 2023.10.13, Shenzhen, Invited Talk.
- **Data Augmented Visualization Design**, Zhejiang University - Summer School, 2023.08.10, Hangzhou, Lecture.
- **Data Augmented Visualization Design**, Zhejing University of Technology, 2023.07.14, Hangzhou, Invited Talk.
- **Information Visualization in the Digital Age: Facilitating Public Engagement and Innovative Practices**, Beijing Institute of Technology, 2023.05.16, Online, Invited Talk.
- **Information Visualization in the Digital Age: Facilitating Public Engagement and Innovative Practices**, Xiamen University, 2023.04.28, Xiamen, Invited Talk.

2022

- **Data Driven Visualization Layout and Color Design**, GAMES, 2022.08.10, Online, Invited Talk.
- **Data Augmented Visualization Design**, Sichuan University, 2022.05.13, Online, Invited Talk.
- **Human-AI Collaboration: from Passive Observation to Interactive Observation and Collaboration**, Tianjin University, 2022.04.06, Online, Invited Talk.

2021

- **OD Visualization and Its Applications in Smart Cities**, China University of Geosciences (Wuhan), 2021.04.11, Wuhan, Invited Talk.
- **Facilitating Public Engagement in the Digital Age with Artistic Data Visualization**, The Hong Kong University of Science and Technology (Guangzhou), 2021.03.23, Online, Invited Talk.
- **Data-Informed Design Powered with Visual and Artificial Intelligence**, The Hong Kong University of Science and Technology (Guangzhou), 2021.01.27, Online, Invited Talk.

2020

- **AI+VIS Empowers Smart City Development**, ChinaVis 2020, 2020.11.01, Xi'an, Lecture.
- **Data-Augmented Visualization Design**, Shandong University, 2020.10.14, Online, Invited Talk.
- **Revisiting the Modifiable Areal Unit Problem in Deep Traffic Prediction with Visual Analytics**, IEEE VIS 2020, 2020.10.14, Online, Paper Presentation.
- **Geographic Visualization**, Zhejiang University - Summer School, 2020.07.13, Hangzhou, Lecture.
- **Visualization and Visual Analytics for Big Urban Data**, China Electronics Technology Group Corporation, 2020.05.15, Shenzhen, Invited Talk.

2019

- **Visual Analytics for City Informatics**, Southern University of Science and Technology (SUSTech), 2019.10.17, Shenzhen, Invited Talk.
- **VitalVizor: A Visual Analytics System for Studying Urban Vitality**, IEEE VIS 2019, 2019.10.10, Vancouver, Paper Presentation.
- **VitalVizor: A Visual Analytics System for Studying Urban Vitality**, ChinaVis 2019, 2019.07.21, Chengdu, Lecture.

Invited Talks and Presentations (continued)

- **Visual Analytics for Massive Urban Public Transport Data**, Peiking University, Summer School, 2019.07.15, Beijing, Lecture.
- **Route-Aware Edge Bundling for Visualizing Origin-Destination Trails in Urban Traffic**, EuroVis 2019, 2019.06.07, Groningen, Paper Presentation.

2018

- **Visual Analytics and Its Applications in Smart Cities**, Xiamen University, 2018.12.12, Xiamen, Invited Talk.
- **Visual Analytics and Urban Data**, University of Science and Technology of China (USTC), 2018.05.10, Hefei, Invited Talk.

2017

- **Visual Analytics and Its Application in Analyzing Big Urban Data**, ICoDSE Conference, 2017.11.01, Palembang, Indonesia, Invited Talk.
- **Urban Data Visualization** & **Geospatial Visualization**, NUS, Summer School, 2017.08.04, Singapore, Lecture.
- **Visual Analytics and Its Applications in Analyzing Big Urban Data**, Shenzhen Institute of Advanced Technology, 2017.05.06, Shenzhen, Invited Talk.
- **Human-Computer Interaction in the Process of Visual Analytics** & **Visual Analytics and Its Application in Analyzing Big Urban Data**, NTU, 2017.02.15, Singapore, Invited Talk.

2016

- **A Visual Analytics Design for Studying Crowd Movement Rhythms from Public Transportation Data**, SIGGRAPH Asia - Symposium on Visualization, 2016.12.08, Macao, Paper Presentation.
- **Future Cities Lab**, ToR-PLJ Research Workshop, 2016.10.10, Jakarta, Invited Talk.
- **Visualizing Waypoints-Constrained Origin-Destination Patterns for Massive Transportation Data**, EuroVis 2016, 2016.06.09, Groningen, Paper Presentation.

2015

- **Visualizing Mobility of Public Transportation System**, VisualSG, 2015.11.20, Singapore, Invited Talk.
- **Visual Analytics for Massive Urban Public Transport Data**, Future Mobility Symposium, 2015.07.08, Singapore, Invited Talk.

2014

- **Visualizing Mobility of Public Transportation System**, IEEE VIS 2014, 2014.11.13, Paris, Paper Presentation.
- **Towards Effective Decision Making Through Big Data Visual Analytics**, SimTecT Conference, 2014.08.27, Adelaide, Invited Talk.

2013

- **Visualizing Interchange Patterns in Massive Movement Data**, EuroVis 2013, 2013.06.20, Leipzig, Paper Presentation.

2012

- **MetroBuzz: Interactive 3D Visualization of Spatiotemporal Data**, International Conference on Computer & Information Science (ICCIS) 2012, 2012.09.26, Kuala Lumpur, Paper Presentation.

SUPERVISION AND MANAGEMENT EXPERIENCE

PhD Students

2024.09 - present

- Ziyao GAO @ CMA, Co-supervisor: Prof. Theo Papatheodorou
- Haichuan LIN @ CMA, Co-supervisor: Prof. Kang Zhang

2024.01 - present

- Yusong WANG @ CMA, Co-supervisor: Prof. Guobiao Hu

2023.09 - present

- Zhiyao YANG @ CMA, Co-supervisor: Prof. Haining Liang
- Jian YU @ CMA, Co-supervisor: Prof. Zeyu Wang
- Xingchen ZENG @ DSA, Co-supervisor: Prof. Wei Wang

2022.09 - present

- Yihan HOU @ CMA, Co-supervisor: Prof. Huamin Qu

SUPERVISION AND MANAGEMENT EXPERIENCE (continued)

- Zhan WANG @ CMA, Co-supervisor: Prof. Fugee Tsung
- Rong HUANG @ CMA, Co-supervisor: Prof. Kang Zhang
- Jianing HAO @ DSA, Co-supervisor: Prof. Guang Zhang

2021.09 - present
- Yilin YE @ CMA, Co-supervisor: Prof. Kang Zhang

Master Students

2024.09 - present
- Zian ZHAO @ CMA

2023.09 - present
- Manling YANG @ CMA, Co-supervisor: Prof. Luwen Yu
- Yiwen ZHANG @ CMA, Co-supervisor: Prof. David Yip
- Chunting LI @ DSA, Co-supervisor: Prof. Yuyu Luo

2022.09 - 2024
- Shishi XIAO @ CMA, Co-supervisor: Prof. Yingcong Chen
  Next: PhD student @ Brown University
- Yihan Chen @ CMA, Co-supervisor: Prof. Kang Zhang
  Next: PhD student @ Beijing Institute of Technology
- Hao CUI @ CMA, Co-supervisor: Prof. David Yip
  Next: China Mobile
- Wenjing FANG @ DSA, Co-supervisor: Prof. Yuekuan Zhou

2020.09 - 2023.06
- Lingdan SHAO @ SIAT
  Next: Huawei

2019.09 - 2022.06
- Xi CHEN @ SIAT
  Next: Meituan

RAs and Interns

2024.09 - present
- Xingyi WANG, RA @ HKUST(GZ)

2024.06 - present
- Yuanbang LIU, Intern @ HKUST(GZ), undergraduate student from South China University of Technology
- Chenxi RUAN, Intern @ HKUST(GZ), undergraduate student from South China University of Technology

2024.06 - 2024.11
- Qiuchen FAN, Intern @ HKUST(GZ), master student from Tianjin University

2024.01 - 2024.09
- Zhuowen LIANG, Intern @ HKUST(GZ), undergraduate student from South China University of Technology

2024.06 - 2024.09
- Xiaoxue ZHOU, Intern @ HKUST(GZ), undergraduate student from UIC

2023.06 - 2024.09
- Ziyao GAO, RA @ HKUST(GZ), master student from Peking University, now PhD student with me

2022.07 - 2023.12
- Qing SHI, Intern @ HKUST(GZ), graduated from Zhejiang University of Finance and Economics

2020.01 - 2021.08
- Yanna LIN, Intern @ SIAT, PhD student from HKUST

2020.05 - 2021.07
- Mengyang WU, remote supervision, PhD student from CUHK

2019.10 - 2020.03
- Zezheng FENG, remote supervision, PhD student from HKUST

2019.05 - 2020.02
- Zhiliang ZENG, remote supervision, PhD student from CUHK

2020.01 - 2021.05
- Chengqiao LIN, Intern @ SIAT, master student from Xiamen University

2019.01 - 2019.05
- Linping YUAN, Intern @ SIAT, PhD student from HKUST

2019.09 - 2020.07
- Shidong WANG, Intern @ SIAT, master student from Shandong University

SUPERVISION AND MANAGEMENT EXPERIENCE (continued)

2017.10 - 2018.09	Chi ZHANG, Intern @ CIVAL, FCL, PhD student from University of Science and Technology of China
2017.01 - 2017.03	Qiaomu Shen, remote supervision, PhD student from HKUST
2017.01 - 2017.07	Sisi Salia, Intern @ CIVAL, FCL, undergraduate student from NTU
2016.09 - 2018.02	Dr. Jan Perhac, PostDoc @ CIVAL, FCL
	Shiho Asada, Graphics Designer @ CIVAL, FCL
2016.09 - 2017.01	Filip Schramaka, RA @ CIVAL, FCL
2016.05 - 2016.07	Lu Yuhao, Intern @ CIVAL, FCL , undergraduate student from NTU
2015.05 - 2015.08	Er Zheng Hui, Intern @ CIVAL, FCL, undergraduate student from NTU