

Xinhuan Shu

Research Associate, HKUST VisLab

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My research probes the intersection of data visualization and human-computer interaction, where I aim to explore innovative approaches to facilitate human-data interaction. Specifically, I conduct user studies to understand how humans perceive and apply visual designs and interactions in data-driven communication and decision-making. Further, I design and develop interactive and automatic tools for both novices and experts to ease the creation of data visualizations, paving the way for data democratization.

EDUCATION

Aug. 2021	Ph.D. in Computer Science
Sept. 2017	The Hong Kong University of Science and Technology, Hong Kong, China <ul style="list-style-type: none">▶ Supervisor : Prof. Huamin Qu▶ Thesis : Enhancing data-driven storytelling with animated visualization
July 2017	B.Eng. in Computer Science, minor in Public Administration
Sept. 2013	Chu Kochen Honors College, Zhejiang University, Hangzhou, China <ul style="list-style-type: none">▶ Supervisor : Prof. Yingcai Wu▶ Thesis : Interactive visualization of table tennis data

EXPERIENCE

Present	Research Associate, University of Edinburgh
Sept. 2022	School of Informatics, UoE, Edinburgh, UK <ul style="list-style-type: none">▶ Advised by Prof. Benjamin Bach, VisHub.
Aug. 2022	Research Associate, The Hong Kong University of Science and Technology
Nov. 2021	CSE Department, HKUST, Hong Kong, China <ul style="list-style-type: none">▶ Advised by Prof. Huamin Qu, VisLab.▶ Mentor two Ph.D. students on research projects for visualization testing programs and E-learning engagement analysis.
April 2021	Research Intern, Zhejiang Lab
Aug. 2020	Research Center for Integrated Intelligence, Zhejiang Lab, Hangzhou, China <ul style="list-style-type: none">▶ Advised by Prof. Yingcai Wu and Prof. Wei Chen, Jianwei Group.▶ Research on authoring tools for animated visualization.▶ Collaborate on designing grammars for coordinating visualization in multiple views.
Mar. 2019	Visiting Student, Zhejiang University
Dec. 2018	State Key Lab of CAD&CG, Zhejiang University, Hangzhou, China <ul style="list-style-type: none">▶ Advised by Prof. Yingcai Wu, ZJUIDG Group.▶ Design tools for authoring animated word clouds to tell stories with textual data.

PUBLICATION

- [15] Lu Ying, **Xinhuan Shu**, Dazhen Deng, Yuchen Yang, Tan Tang, Lingyun Yu, Yingcai Wu. [MetaGlyph : Automatic Generation of Metaphoric Glyph-based Visualization](#). *IEEE Transactions on Visualization and Computer Graphics (To Appear) (Proceedings of VIS'22)*.
- [14] Ran Chen, Di Weng, Yanwei Huang, **Xinhuan Shu**, Jiayi Zhou, Guodao Sun, Yingcai Wu. [Rigel : Transforming Tabular Data By Declarative Mapping](#). *IEEE Transactions on Visualization and Computer Graphics (To Appear) (Proceedings of VIS'22)*.
- [13] Dazhen Deng, Yihong Wu, **Xinhuan Shu**, Jiang Wu, Siwei Fu, Weiwei Cui, Yingcai Wu. [VisImages : A Fine-Grained Expert-Annotated Visualization Dataset](#). *IEEE Transactions on Visualization and Computer Graphics 2022*.
- [12] Aoyu Wu, Yun Wang, **Xinhuan Shu**, Dominik Moritz, Weiwei Cui, Haidong Zhang, Dongmei Zhang, Huamin Qu. [AI4VIS : Survey on Artificial Intelligence Approaches for Data Visualization](#). *IEEE Transactions on Visualization and Computer Graphics 2021*.

- [11] Ji Lan, Jiachen Wang, **Xinhuan Shu**, Zheng Zhou, Hui Zhang, Yingcai Wu. RallyComparator : visual comparison of the multivariate and spatial stroke sequence in table tennis rally. *Journal of Visualization 2021 (ChinaVis'21)*.
- [10] Jiachen Wang, Dazhen Deng, Xiao Xie, **Xinhuan Shu**, Yu-Xuan Huang, Le-Wen Cai, Hui Zhang, MinLing Zhang, Zhi-Hua Zhou, and Yingcai Wu. Tac-Valuer : Knowledge-based Stroke Evaluation in Table Tennis. In *The ACM SIGKDD Conference on Knowledge Discovery and Data Mining 2021 (SIGKDD'21)*.
- [9] Ran Chen, **Xinhuan Shu**, Jiahui Chen, Di Weng, Junxiu Tang, Siwei Fu, Yingcai Wu. Nebula : A Coordinating Grammar of Graphics. *IEEE Transactions on Visualization and Computer Graphics 2021*.
- [8] Yifang Wang, Hongye Liang, **Xinhuan Shu**, Jiachen Wang, Ke Xu, Zikun Deng, Cameron Dougall Campbell, Bijia Chen, Yingcai Wu, Huamin Qu. Interactive Visual Exploration of Longitudinal Historical Career Mobility Data. *IEEE Transactions on Visualization and Computer Graphics 2021*.
- [7] Junxiu Tang, Lingyun Yu, Tan Tang, **Xinhuan Shu**, Lu Ying, Yuhua Zhou, Peiran Ren, Yingcai Wu. Narrative Transitions in Data Videos. In *IEEE VIS Conference Short Paper 2020 (Proceedings of VIS'20)*.
- [6] **Xinhuan Shu**, Aoyu Wu, Junxiu Tang, Benjamin Bach, Yingcai Wu, Huamin Qu. What Makes a Data-GIF Understandable?. *IEEE Transactions on Visualization and Computer Graphics 2020 (Proceedings of VIS'20)*.
- [5] **Xinhuan Shu**, Jiang Wu, Xinke Wu, Hongye Liang, Weiwei Cui, Yingcai Wu, Huamin Qu. DancingWords : Exploring Animated Word Clouds to Tell Stories. *Journal of Visualization 2020 (ChinaVis'20)*.
🏆 **Best Paper Honorable Mention**.
- [4] Haipeng Zeng, **Xinhuan Shu**, Yanbang Wang, Yong Wang, Liguang Zhang, Ting-Chuen Pong, Huamin Qu. EmotionCues : Emotion-Oriented Visual Summarization of Classroom Videos. *IEEE Transactions on Visualization and Computer Graphics 2020*.
- [3] Aoyu Wu, Bon Kyung Ku, Furui Cheng, **Xinhuan Shu**, Abishek Puri, Yifang Wang, Huamin Qu. Pulse : Toward a Smart Campus by Communicating Real-time Wi-Fi Access Data. In *IEEE VIS Workshop on Visualization for Communication 2018 (Proceedings of VIS'18)*.
- [2] Xuanwu Yue, **Xinhuan Shu**, Xinyu Zhu, Xinnan Du, Zheqing Yu, Dimitrios Papadopoulos Siyuan Liu. BitExTract : Interactive Visualization for Extracting Bitcoin Exchange Intelligence. *IEEE Transactions on Visualization and Computer Graphics 2018 (Proceedings of VIS'18)*.
- [1] Yingcai Wu, Ji Lan, **Xinhuan Shu**, Chenyang Ji, Kejian Zhao, Jiachen Wang, Hui Zhang. iTTVis : Interactive Visualization of Table Tennis Data. *IEEE Transactions on Visualization and Computer Graphics 2017 (Proceedings of VIS'17)*.

TEACHING

Fall 2019	Teaching Assistant Coordinator, CSE Department, HKUST
Fall 2021	Teaching Assistant, Introduction to Computer Science, HKUST

AWARD

2017-2021	Postgraduate Studentship (~21,630 HKD/yr), HKUST
2020	Best Paper Honorable Mention, ChinaVis 2020 [5]
2017	Outstanding Graduates of Zhejiang University
2016	Honorable Mention Award for 2016 MCM/ICM
2013-2015	University Scholarships, Zhejiang University
2013-2015	Honorable Title of Excellent Student, Zhejiang University

SERVICE

Program	IEEE VIS 2022 (Short Paper)
Committee	ChinaVis 2022
Review	IEEE VIS Conference, 2021-2022 ACM Conference on Human Factors in Computing Systems (CHI), 2021-2022 EuroVis 2020-2021 IEEE Pacific Visualization (PacificVis) Symposium, 2021-2022 ChinaVis 2021-2022
Volunteer	IEEE VIS Conference 2020

TALK

- June 2021** Enhancing data-driven storytelling with animated visualization
Tongji University and Fudan University
- Oct. 2020** DancingWords : Exploring Animated Word Clouds to Tell Stories
ChinaVis, Xi'an, China
- Oct. 2020** What Makes a Data-GIF Understandable?
IEEE VIS Conference

SKILL

- Program-
ming** TypeScript, JavaScript, Python, C/C++
- Web Devs** Vue.js, React, D3
- Language** Chinese Mandarin (native), English (professional working proficiency), French (novice)