Junxiu TANG

Center for Science of Science & Innovation (CSSI)
Kellogg School of Management, Northwestern University

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RESEARCH INTERESTS

My research studies how interactive visualization helps people communicate and make sense of data. It spans three connected areas: ***data-driven insight extraction***, through visual analytics for domain experts; ***narrative development***, through storytelling and communication around data; and ***expressive creation***, through data-driven art and video that bring data to a broad audience. At the Center for Science of Science & Innovation (CSSI), my current work combines the validation of AI-for-science systems with decision-support tools for research-funding stakeholders. I am also increasingly interested in how AI can support research, design, and collaboration.

Keywords: Data Visualization, Visual Analytics, Data Storytelling, Data-driven Communication, Data Video, Embedded Visualization, Event Sequence Visualization, Data-driven Art, Human-AI Collaboration, AI for Science, Science of Science

WORK

Northwestern University, Evanston, US — 06.2025–Present
Center for Science of Science & Innovation (CSSI)
Kellogg School of Management
Post-Doctoral Researcher
Funded by Assessing and Predicting Technology Outcomes (APTO) (NSF 23-600)

Northwestern University, Evanston, US — 06.2025–Present
Northwestern Innovation Institute (NI Institute)
Kellogg School of Management
Affiliated Post-Doctoral Fellow

Zhejiang University, Hangzhou, China — 01.2025–05.2025
Interactive Data Group
College of Computer Science and Technology
Research Assistant

EDUCATION

Zhejiang University, Hangzhou, China — 09.2019–12.2024
Department of Computer Science and Technology
College of Computer Science and Technology
Ph.D., with Prof. Yingcai Wu, at ZJUIDG
Thesis: Theoretical and Applied Research of Visualizations for Fixed-order Event Sequence

Inria, Palaiseau, France — 11.2023–06.2024
Inria Saclay Center
Visiting Ph.D. Student, with Dr. Petra Isenberg, at Aviz
Research Focus: Embedded Visualizations in Swimming Videos

Zhejiang University, Hangzhou, China — 09.2014–06.2019
Department of Digital Media Technology
College of Computer Science and Technology
B.Eng.
Research Focus: Design Guidelines on Augmenting Short-form Data Videos

RESEARCH INTERNSHIPS

JD Intelligent Cities Research, Jing Dong Technology 02.2022–06.2022
Beijing, China
Research Intern, Software Engineer
Building visual analytics systems for urban computing, especially intelligent transportation and disease control. Supervised by Dr. Jie Bao and Prof. Yu Zheng.

IDEA Lab, Alibaba-Zhejiang University Joint Research Institute of Frontier Technology 09.2019–12.2021
Hangzhou, China
Research Intern
Coorperated with DAMO Academy and Cainiao

Cainiao Smart Logistics, Alibaba Group 09.2020-12.2021
Hangzhou, China
Research Intern, UI&UX Designer
Building the visual analytics system for intelligent logistics, especially on order processing monitoring and optimization.

Alibaba DAMO Academy for Discovery, Adventure, Momentum and Outlook, Alibaba Group 11.2019-09.2020
Hangzhou, China
Research Intern, Algorithm Engineer
Worked on visualization theory and intelligent methods for data video generation and augmentation.

PUBLICATIONS

Asterisk* indicates equal contribution.

[P1] **Junxiu Tang**, Lijie Yao, Lu Ying, Romain Vuillemot, and Petra Isenberg. Diving Deep into Time: Temporal Arrangements for Embedded Visualization in Swimming Videos. In *IEEE Transactions on Visualization and Computer Graphics (TVCG) 2026*, DOI: 10.1109/TVCG.2026.3689361, OSF.

[P2] **Junxiu Tang**, Fumeng Yang, Jiang Wu, Yifang Wang, Jiayi Zhou, Xiwen Cai, Lingyun Yu, and Yingcai Wu. A Comparative Study on Fixed-order Event Sequence Visualizations: Gantt, Extended Gantt, and Stringline Charts. In *IEEE Transactions on Visualization and Computer Graphics (TVCG) 2024*, DOI: 10.1109/TVCG.2024.3358919, OSF.

[P3] **Junxiu Tang**, Yuhua Zhou, Tan Tang, Di Weng, Boyang Xie, Lingyun Yu, Huaqiang Zhang, and Yingcai Wu. A Visualization Approach for Monitoring Order Processing in E-Commerce Warehouse. In *IEEE Transactions on Visualization and Computer Graphics (TVCG) 2022 (Proceedings of IEEE VIS '21)*, DOI: 10.1109/TVCG.2021.3114878.

[P4] **Junxiu Tang**, Lingyun Yu, Tan Tang, Xinhuan Shu, Lu Ying, Yuhua Zhou, Peiran Ren, and Yingcai Wu. Narrative Transitions in Data Videos. Short Paper. In *Proceedings of IEEE VIS '20*, DOI: 10.1109/VIS47514.2020.00037, Project webpage.

[P5] **Junxiu Tang**, Rui Sheng, Yifang Wang, Xinhuan Shu, Xiaojiao Chen, Tan Tang, and Yingcai Wu. Posts with No Response: The Island of Loneliness. In *IEEE VIS Arts Program (VISAP2023@IEEE VIS)*, DOI: 10.1109/VISAP60414.2023.00007, OSF.

[P6] **Junxiu Tang**, Jiayi Zhou, Yifang Wang, Xinhuan Shu, Peiquan Xia, Xiaojiao Chen, Tan Tang, and Yingcai Wu. Loss of Sonnet 18. In *ACM SIGGRAPH Art Gallery (2024)*, DOI: 10.1145/3641523.3669939, OSF.

[P7] **Junxiu Tang**, Hanna Renedo, Yifang Wang, and Dashun Wang. Effort. Artwork. In *NeurIPS 2026 Creative AI Track*, OpenReview, Code.

[P8] Hanna Renedo, **Junxiu Tang**, and Dashun Wang. Symbiotic Traces: An Ecological Record of Language Model Training. Artwork. In *NeurIPS 2026 Creative AI Track*, OpenReview.

[P9] **Junxiu Tang**, Huimin Ren, Zikun Deng, Di Weng, Tan Tang, Lingyun Yu, Jie Bao, Yu Zheng, and Yingcai Wu. Towards Better Illegal Chemical Facility Detection with Hazardous Chemicals Transportation Trajectories. In *Journal of Visualization 2025 (Proceedings of ChinaVis '24)*, DOI: 10.1007/s12650-025-01055-8.

[P10] Tan Tang*, **Junxiu Tang***, Jiewen Lai, Lu Ying, Peiran Ren, Lingyun Yu, and Yingcai Wu. SmartShots: Enabling Automatic Generation of Videos with Data Visualizations Embedded. Extended Abstract. In *ACM International Conference on Multimedia (Proceedings of MM '20)*, DOI: 10.1145/3394171.3414356.

[P11] Tan Tang, **Junxiu Tang**, Jiewen Lai, Lu Ying, Yingcai Wu, Lingyun Yu, and Peiran Ren. SmartShots: An Optimization Approach for Generating Videos with Data Visualizations Embedded. In *ACM Transactions on Interactive Intelligent Systems (TiiS) 2022*, DOI: 10.1145/3484506.

[P12] Sadia Rubab, **Junxiu Tang**, and Yingcai Wu. Examining Interaction Techniques in Data Visualization Authoring Tools from the Perspective of Goals and Human Cognition: A Survey. In *Journal of Visualization 2021*, DOI: 10.1007/s12650-020-00705-3.

[P13] Tan Tang, **Junxiu Tang**, Jiayi Hong, Lingyun Yu, Peiran Ren, and Yingcai Wu. Design Guidelines for Augmenting Short-form Videos using Animated Data Visualizations. In *Journal of Visualization 2021 (Proceedings of ChinaVis '19)*, DOI: 10.1007/s12650-020-00644-z.

[P14] Jiayi Zhou, Renzhong Li, **Junxiu Tang**, Tan Tang, Haotian Li, Weiwei Cui, and Yingcai Wu. Understanding Nonlinear Collaboration between Human and AI Agents: A Co-design Framework for Creative Design. In *ACM CHI conference on Human Factors in Computing Systems (Proceedings of CHI '24)*, DOI: 10.1145/3613904.3642812.

[P15] Xinhuan Shu, Alexis Pister, **Junxiu Tang**, Fanny Chevalier, and Benjamin Bach. Does This Have a Particular Meaning? Interactive Pattern Explanation for Network Visualizations In *IEEE Transactions on Visualization and Computer Graphics (TVCG) 2024 (Proceedings of IEEE VIS '24)*, DOI: 10.1109/TVCG.2024.3456192.

[P16] Xinhuan Shu, Aoyu Wu, **Junxiu Tang**, Benjamin Bach, Yingcai Wu, and Huamin Qu. What Makes a Data-GIF Understandable? In *IEEE Transactions on Visualization and Computer Graphics (TVCG) 2021 (Proceedings of IEEE VIS '20)*, DOI: 10.1109/TVCG.2020.3030396, Project webpage.

[P17] Sadia Rubab, Lingyun Yu, **Junxiu Tang**, Yingcai Wu. Exploring Effective Relationships Between Visual-Audio Channels in Data Visualization. In *Journal of Visualization 2023*, DOI: 10.1007/s12650-023-00909-3.

[P18] Tan Tang, Kaijuan Yuan, **Junxiu Tang**, Yingcai Wu. Toward the Better Modeling and Visualization of Uncertainty for Streaming Data. In *Journal of Visualization 2018 (Proceedings of ChinaVis '18)*, DOI: 10.1007/s12650-018-0518-y.

[P19] Ran Chen, Xinhuan Shu, Jiahui Chen, Di Weng, **Junxiu Tang**, Siwei Fu, and Yingcai Wu. Nebula: A Coordinating Grammar of Graphics. In *IEEE Transactions on Visualization and Computer Graphics (TVCG) 2022*, DOI: 10.1109/TVCG.2021.3076222.

[P20] Yifang Wang, Yang Wang, Yifan Cao, Huamin Qu, **Junxiu Tang**, and Yingcai Wu. Explore Mindfulness without Deflection: A Data Art Based on the Books of Songs. Pictorial. In *Proceedings of IEEE VISAP '21*, DOI: 10.1109/VISAP52981.2021.00014, Project webpage.

PATENTS

Yingcai Wu (PhD supervisor), **Junxiu Tang**, Tan Tang, Xiaohua Chen, Huaqiang Zhang, and Yi Luo. A Visualization System for Real-time Monitoring and Handling Delay Orders in an E-commerce Warehouse. *China National Intellectual Property Administration*, ZL202110901725.8.

Yingcai Wu (PhD supervisor), **Junxiu Tang**, Zikun Deng, Di Weng, and Tan Tang. A System for Illegal Chemical Facility Detection with Hazardous Chemicals Transport Trajectories. *China National Intellectual Property Administration*, ZL202411427207.7.

Yingcai Wu (PhD supervisor), Tan Tang, **Junxiu Tang**, Zhanning Gao, Pan Wang, and Peiran Ren. A Method, Device, and Electronic Equipment for Obtaining Video Data. *China National Intellectual Property Administration*, CN113163227A (published application, pending grant).

ART EXHIBITION

Effort.
NeurIPS Creative AI Track, Sydney, Australia 12.2026

Symbiotic Traces: An Ecological Record of Language Model Training.
NeurIPS Creative AI Track, Sydney, Australia 12.2026

Loss of Sonnet 18.
SIGGRAPH Art Gallery, Denver, Colorado, US 07.2024

Posts with No Response: The Island of Loneliness.
China Vis Art Exhibition, Hong Kong, China 07.2024
Information+ Exhibition, Edinburgh, Scotland, UK 11.2023
IEEE VIS Art Exhibition, Melbourne, Victoria, Australia 10.2023

A Gear-like Storyline of Inception.
China Vis Art Exhibition, Shanghai, China 07.2018

ACADEMIC SERVICE

Co-organizer
What Do Visualization Art Projects Bring to the VIS Community? 2024
Panel @IEEE VIS 2024

Program Committee
IEEE Visualization & Visual Analytics (VIS) 2026
ACM Conference on Intelligent User Interfaces (IUI) 2027
IEEE VIS Arts Program 2025-2026
IEEE Visualization & Visual Analytics (VIS) Short Papers, Posters 2025

Conference Review
ACM Conference on Human Factors in Computing Systems (CHI) 2024-2026
ACM Symposium on User Interface Software and Technology (UIST) 2026
ACM Conference on Computer-Supported Cooperative Work & Social Computing (CSCW) 2025-2026
ACM Designing Interactive Systems (DIS) 2026
Creativity & Cognition 2026
IEEE Visualization & Visual Analytics (VIS) 2022-2026
IEEE Pacific Visualization Symposium (PacificVis) 2024-2026
IEEE Conference on Virtual Reality and 3D User Interfaces (VR) 2027
Eurographics Conference on Visualization (EuroVis) 2026
International Symposium on Visual Information Communication and Interaction (VINCI) 2026
China Visualization and Visual Analytics Conference (ChinaVis) 2022-2026
Annual Conference on Neural Information Processing Systems (NeurIPS) Creative AI Track 2026

Journal Review
IEEE Transactions on Visualization and Computer Graphics (TVCG) 2025-2026

Student Volunteer
IEEE Visualization & Visual Analytics (VIS) 2024
China Visualization and Visual Analytics Conference (ChinaVis) 2024
Eurographics Conference on Visualization (EuroVis) 2024
Information+ Conference (Info+) 2023

TEACHING

Zhejiang University Winter 2022
21191590: Cross Media Visualization
21121280: Information Visualization
Teaching Assistant

Zhejiang University Summer 2021
International Visualization Summer School
Teaching Assistant, Teaching Assistant Coordinator (TAC)

Zhejiang University Summer 2019-2020
International Visualization Summer School
Teaching Assistant

Zhejiang University Winter 2020
21191590: Cross Media Visualization
21121280: Information Visualization
Teaching Assistant, Teaching Assistant Coordinator (TAC)

TALK

Intersections of Logic and Expression: Bridging Science and Art through Data.
Boston, Massachusetts, US 06.2025
Conference talk @Data | Art Symposium 2025

A Comparative Study on Fixed-order Event Sequence Visualizations: Gantt, Extended Gantt, and Stringline Charts.
Tampa, Florida, US (Virtual) 10.2024
Conference talk @VIS 2024

From Concrete to Ambiguous and Reverse.
Hangzhou, Zhejiang, China 09.2024
Invited talk
@School of Art and Archaeology, Zhejiang University

Loss of Sonnet 18.
Denver, Colorado, US 07.2024
Conference artist talk @SIGGRAPH 2024

Posts with No Response: The Island of Loneliness.
Hong Kong, China 07.2024
Conference artist talk @ChinaVis 2024

Towards Better Illegal Chemical Facility Detection with Hazardous Chemicals Transportation Trajectories.
Hong Kong, China 07.2024
Conference talk @ChinaVis 2024

Posts with No Response: The Island of Loneliness.
Melbourne, Victoria, Australia 10.2023
Conference artist talk @IEEE VIS 2023

Visualization x Art.
Hangzhou, Zhejiang, China 06.2023
Invited talk
@School of Design and Innovation, China Academy of Art

A Visualization Approach for Monitoring Order Processing in E-Commerce Warehouse.
New Orleans, Louisiana, US (Virtual) 10.2021
Conference talk @IEEE VIS 2021

Narrative Transitions in Data Videos.
Salt Lake City, Utah, US (Virtual) 10.2020
Conference talk @IEEE VIS 2020

Design Guidelines for Augmenting Short-form Videos using Animated Data Visualizations.
Chengdu, Sichuan, China 07.2019
Conference talk @China Vis 2019

A Gear-like Storyline of Inception.
Shanghai, China 07.2018
Conference talk @China Vis 2018

Toward the Better Modeling and Visualization of Uncertainty for Streaming Data.
Shanghai, China 07.2018
Conference talk @China Vis 2018

MENTORSHIP

Zhejiang University

Feiyuan Qu, Master student, co-mentored with Tan Tang	2025
Weichen Sun, Ph.D. student, co-mentored with Tan Tang	2024-2025
Jiayi Zhou, undergraduate student, co-mentored with Yingcai Wu	2022-2024
Yuhua Zhou, Master student, co-mentored with Yingcai Wu	2020-2021
Boyang Xie, undergraduate student, co-mentored with Yingcai Wu	2020-2021
Lu Ying, undergraduate student, co-mentored with Yingcai Wu	2019-2020