Leni Yang

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EDUCATION

2022 **Ph.D. in Computer Science and Engineering**, Hong Kong University of Science and Technology
Supervised by Prof. Huamin Qu at VisLab

2018 **B.S. in Information Systems**, University of Electronic Science and Technology of China

EXPERIENCE

2022 – now **Hong Kong University of Science and Technology**
Postdoctoral Fellow, Department of Computer Science and Engineering

2022-06 – 2022-10 **Deloitte iBond (Shanghai) Company Limited**
Intern, Digital Consultant, iBond Department

2020-12 – 2021-04 **Tongji University**
Visiting Researcher, Supervised by Prof. Nan Cao at iDVx

RESEARCH INTERESTS

Research Areas: Information visualization, Human-computer interaction, Communicative data visualization, Data storytelling, Big data visual analytics.

Research Focus: My research investigates effective design theories, techniques, and authoring tools for turning complex data into data stories that enhance understanding, inform decision-making, and drive actions. The mission is to empower everyone to harness and communicate data. My recent research focuses on immersive (XR) data storytelling and LLM-assisted data story authoring.

RESEARCH METHODS AND SKILLS

Empirical studies, Human-centered design, Mixed methods, Statistical analysis, Workshop

Web development, Unity development, Python, Machine learning

PUBLICATIONS

Conference Publications

2024 Fengjie Wang, Yanna Lin, **Leni Yang**, Haotian Li, Mingyang Gu, Min Zhu, Huamin Qu. "**OutlineSpark: Igniting AI-powered Presentation Slides Creation from Computational Notebooks through Outlines**" *In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (ACM CHI 2024, conditionally accepted).*

2023 Yanna Lin, Haotian Li, **Leni Yang**, Aoyu Wu, Huamin Qu. "**InkSight: Leveraging Sketch Interaction for Documenting Chart Findings in Computational Notebooks.**" *IEEE Transactions on Visualization and Computer Graphics (IEEE VIS 2023)*. doi: 10.1109/TVCG.2023.3327155.

2023 Leo Yu-Ho Lo, Yi-Fan Cao, **Leni Yang**, Huamin Qu. "**Why Change My Design: Explaining Poorly Constructed Visualization Designs with Explorable Explanations.**" *IEEE Transactions on Visualization and Computer Graphics (IEEE VIS 2023)*. doi: 10.1109/TVCG.2023.3327155.

2023 Xian Xu, Aoyu Wu, **Leni Yang**, Zheng Wei, Rong Huang, David Yip, Huamin Qu. "**Is It the End? Guidelines for Cinematic Endings in Data Videos.**" *In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (ACM CHI 2023)*. doi: 10.1145/3544548.3580701.

2023 **Leni Yang**, Aoyu Wu, Wai Tong, Xian Xu, Zheng Wei, Huamin Qu. "**Understanding 3D Data Videos: From Screens to Virtual Reality.**" *In Proceedings of the IEEE Pacific Visualization Symposium (PacificVis 2023*. doi: 10.1109/PacificVis56936.2023.00029.

2022 Xian Xu, **Leni Yang**, David Yip, Mingming Fan, Zheng Wei, Huamin Qu. "**From Wow to Why: Guidelines for Creating the Opening of a Data Video with Cinematic Styles.**" *In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (ACM CHI 2022)*. doi: 10.1145/3491102.3501896.

2021 **Leni Yang**, Xian Xu, XingYu Lan, Ziyan Liu, Shunan Guo, Yang Shi, Huamin Qu, Nan Cao. "**A Design Space for Applying the Freytag's Pyramid Structure to Data Stories.**" *IEEE Transactions on Visualization and Computer Graphics (IEEE VIS 2021)*. doi: 10.1109/TVCG.2021.3114774.

2019 Ke Xu, Yun Wang, **Leni Yang**, Yifang Wang, Bo Qiao, Si Qin, Yong Xu, Haidong Zhang, Huamin Qu. "**Clouddet: Interactive Visual Analysis of Anomalous Performances in Cloud Computing Systems.**" *IEEE Transactions on Visualization and Computer Graphics (IEEE VIS 2019)*. doi: 10.1109/TVCG.2019.2934.

Journal Publications

2023 Qian Zhu, Linping Yuan, Zian Xu, **Leni Yang**, Meng Xia, Zhuo Wang, Hai-Ning Liang, Xiaojuan Ma. "**From Reader to Experiencer: Design and Evaluation of an Interactive VR Story for Promoting the Situation Awareness of Public Health Threats.**" *International Journal of Human-Computer Studies (IJHCS 2023)*. 10.1016/j.ijhcs.2023.103137.

2021 **Leni Yang**, Cindy Xiong, Jason K. Wong, Aoyu Wu, Huamin Qu. "**Explaining with Examples: Lessons Learned from Crowdsourced Introductory Description of Information Visualizations.**" *IEEE Transactions on Visualization and Computer Graphics (TVCG 2021)*. doi:10.1109/TVCG.2021.3128157.

Short Papers and Posters

2023 Rui Sheng, **Leni Yang**, Haotian Li, Yan Luo, Ziyang Xu, Zhilan Zhou, David Gotz, Huamin Qu. "**Knowledge Compass: A Question Answering System Guiding Students with Follow-Up Question Recommendations.**" *Adjunct Proceedings of the 36th Annual ACM Symposium on User Interface Software and Technology (UIST 2023 Demo)*.

2023 Haobo Li, Kentaro Takahira, Kam Kwai Wong, **Leni Yang**, Wai Tong, Huamin Qu. "**Landslide Visualization Situated on Tangible Terrain Models. (IEEE VIS 2023 Poster)**".

PROJECTS

2023 – **AI-Powered, Personalized Analysis and Feedback Platform for K-12 Education in Computational Thinking Skills**
The project aims to empower students to excel in computational thinking skills by reducing the workload of teachers and parents, facilitating efficient analysis of student performance, and providing personalized guidance. I contributed to proposing research ideas.

2023 **Centre for Slope Safety**
The project aims to educate the general public about landslide prevention methods in Hong Kong through AR games and data visualization techniques. I contributed to the interactive map visualizations, interface, and interaction design and development. The AR game has been deployed in the visitor center at HKUST (Guangzhou) campus.

2019 – 23 **Pulse of HKUST**
This project aims to facilitate campus management and better experiences of university members by palpating the "pulse" of the campus community, such as human crowds, facility availability, and events, with the combined power of data visualization, big data, and AI. I contributed to the system interface design and development and the crowd prediction. The project has been demoed in the public area of HKUST with wide media coverage (e.g., South China Morning Post, Tai Kung Pao).

AWARDS AND GRANTS

Awards and Honors

2019 Research & Development Award, 19th Asia Pacific Information and Communications Technology Alliance (APICTA) Awards

2019 Gold Award, Student Innovation, Hong Kong ICT Awards (HKICT)

2018 Outstanding Graduates of Sichuan Province

2018 Outstanding Graduates of the University of Electronic Science and Technology of China

2018 Excellent Bachelor Dissertation Award of the University of Electronic Science and Technology of China

2017 China National Scholarship (top 0.2%)

2017 Honorable Mention in MCM/ICM

2016 The First Prize (Sichuan Province) in Contemporary Undergraduate Mathematical Contest in Modeling

2016 China National Scholarship (top 0.2%)

2015 China National Scholarship (top 0.2%)

Fellowships and Grants

2023 Innovation and Technology Fund (ITF) Research Talend Hub for Postdoctoral Fellowship (HKD 540,000 per year). The Government of the Hong Kong Special Administrative Region Innovation and Technology Fund.

2022 – 23 Research Travel Grant (HKD 24,000). Hong Kong University of Science and Technology.

2019 Technology Development of Digital Twin for Regional Earth System of the GBA (HKD 87 Million, Contribute to the writing of the visual analytics part). University Grants Committee of Hong Kong Areas of Excellence Scheme.

TEACHING EXPERIENCE

2022 Computer Organization, Teaching Assistant

2019 Introduction to Computer Science, Teaching Assistant

2019 Introduction to Computing with Excel VBA, Teaching Assistant

TALKS AND OUTREACH

2023-10 Establishing and Thriving in an Academic Career. IEEE VIS Conference Panel, Melbourne, Australia.

2023-06 Bad Data Visualization Designs. ChinaVis Conference Panel, Chongqing, China.

2023-04 Understanding 3D Data Videos: From Screens to Virtual Reality. IEEE Pacific Visualization Symposium, Mix-mode, Online.

2022-10 Explaining with Examples: Lessons Learned from Crowdsourced Introductory Description of Information Visualizations. IEEE VIS Conference, Mix-mode, Online.

2021-10 A Design Space for Applying the Freytag's Pyramid Structure to Data Stories. IEEE VIS Conference, Virtual, Online.

MENTORSHIP

2023 – Yanna Lin, PhD candidate from VisLab at HKUST

2023 – Kentaro Takahira, PhD candidate from VisLab at HKUST

2021 – 23 Xian Xu, PhD graduated from VisLab at HKUST

2023 Fengjie Wang, Visiting Student from Sichuan University

SERVICES

Academic Peer Review

IEEE VIS: The IEEE Visualization Conference

ACM CHI: Conference on Human Factors in Computing Systems

ACM CSCW: Conference on Computer-Supported Cooperative Work And Social Computing

ACM CIKM: Conference on Information and Knowledge Management

ChinaVis: The China Visualization and Visual Analytics Conference

Events Host and Organizer

2023-10 Organizer of the Chinese Students and Scholars Meet-up, IEEE VIS 2023.

2023-04 Paper chair of the Accessible Interaction Technique paper session, ACM CHI 2023.

2023-04 Organizer of the HKUST CHI Researchers Reunion, ACM CHI 2023.