Xiyuan Wang

DATA VISUALIZATION · HUMAN-COMPUTER INTERACTION

3rd year M.A. supervised by Prof. Quan Li, School of Information Science and Technology, ShanghaiTech University

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Summary

I am a 3^{rd} year M.A. student at Shanghaitech University of Conputer Science and Technology, working in ViSeer LAB under the supervision of **Prof. Quan Li**. My research interests lies in human-computer interaction (HCI) and large data visualization (VIS). My research goal is to **enhance player immersion and engagement throughout the game and beyond.**

Education

2022 - Present **Master**, Computer Science and Technology, Shanghaitech University *Shanghai, China*

2018 - 2022 **Bachelor**, Computer Science and Technology, Shanghaitech University *Shanghai, China*

Experience

ViSeer LAB, ShanghaiTech University *Shanghai, China*

Lab member supervised by Prof. Quan Li *2021 – present*

- Design and develop visual analytics systems and tools to enhance player experience and engagement.

User eXperience Center, NetEase *Shanghai, China*

Research internship *Oct, 2022 - Sep, 2023*

- **Churn prediction and prevention (Don'tGo).** Developed an interactive visual analytics system to explore and explain the churn predictions from the perspective of *explicit* and *implicit* features as well as providing implementable interventions to avoid churn using XAI methods.
- **Balance similarity and diversity in friend recommendation (Prefer2SD).** Developed a highly interactive system to support mediating the similarity-diversity ratio of recommended friends based on different in-game preferences of player cohorts.
- **Influence Maximization in Temporal Social Networks.** Labeled players with strong or weak ties in an online FPS mobile game.

The HCI Initiative, HKUST *Hong Kong, China*

Visiting Student *Sep, 2023 - Mar, 2024*

- **Visual Analytics on South China Sea.** Developed an interactive visual analysis system for the South China Sea, integrating several key features: ocean terrain modeling in Cinema4D, ocean current rendering via VFX Graph, and volume rendering using custom shaders in Unity 3D.

Publications

Deciphering Explicit and Implicit Features for Reliable, Interpretable, and Actionable User Churn Prediction in Online Video Games

Xiyuan Wang, Laixin Xie, He Wang, Xingxing Xing, Wei Wan, Ziming Wu, Xiaojuan Ma, Quan Li

Minor Revision in IEEE Transactions on Visualization and Computer Graphics (IEEE TVCG'24), 2024.

Towards Better Scaffolding the Process of Fund Manager Selection in Fund Investments

Longfei Chen, Chen Cheng, He Wang, **Xiyuan Wang**, Yun Tian, Xuanwu Yue, Wong Kam-Kwai, Suting Hong, Quan Li

Accepted in IEEE Transactions on Visualization and Computer Graphics (IEEE TVCG'24), 2024.

PromotionLens: Inspecting Promotion Strategies of Online E-commerce via Visual Analytics

Chenyang Zhang, **Xiyuan Wang**, Chuyi Zhao, Yijing Ren, Tianyu Zhang, Zhenhui Peng, Xiaomeng Fan, Xiaojuan Ma, Quan Li

Accepted IEEE Transactions on Visualization and Computer Graphics (IEEE VIS'22), 2022.

Featured Projects

Deciphering Explicit and Implicit Features for Reliable, Interpretable, and Actionable User Churn Prediction in Online Video Games *Minor Revision*

IEEE TVCG'23 *Jul. 2022 - Present*

- Researched how to *prevent player churn*.
- Developed **Don'tGo**, a visual analytics system integrating a scalable churn prediction model and interpretation techniques to help explore player churn and underlying causes at the feature, individual player, and player group levels.
- Conducted two cases studies, a within-subjects user study and expert interviews that proved the effectiveness and usability of the system.

Supporting Game Story Interpretation and Narrative Inference from Fragmented Clues *Under Review*

Jul. 2024 - Sep. 2024

- Researched how creators interpret game stories from fragmented clues.
- Propose a taxonomy for classifying narrative clues from game story interpreter's perspective.
- Developed a framework that includes in-game mods for capturing and classifying clues automatically through hotkeys, along with an open-source online tool for creators to upload, organize, and interpret clues to piece together the entire story.

Incorporating Visual Analytics for Preference Mediation in Games: Balancing Similarity and Diversity in Friend Recommendations *Under Review*

Jan. 2023 - Oct. 2024

- Researched *diversity and similarity in friend recommendation* and *iterative labeling and propagation*.
- Worked with experts in NetEase to understand their current challenges in friend recommendation.
- Developed **Prefer2SD**, an interactive visual analytics system that supports experts in tracking and assessing both the efficacy of candidate generation and ranking. Moreover, the system facilitates fine-tuning of similarity-diversity ratio to cater to the diverse needs.

Visual Analytics on South China Sea

Sep. 2023 - Mar. 2024

- Customized a volume rendering shader for efficient visualization of the 3D ocean.
- Modeled the terrain using data analysis and Cinema 4D, and visualized ocean currents with Unity VFX Graph.
- Designed the interface prototype and integrated all features, including data loading, slicing, searchlight interactions, side view, and parameter prediction.

Supporting Assimilation of Time-synced Collective Knowledge in Online Science Videos *Under Review*

Jun. 2024 - Sep. 2024

- Developed a web interface for enhancing knowledge acquisition from online science videos, featuring wordstream visualizations and knowledge graph representations.

Self-Learning Enhancement via Epistemologically-Informed LLM Dialogue *Under Review*

Mar. 2024 - Sep. 2024

- Engaged in the pilot study of the user study process.
- Designed the interface prototype and created figures through Figma.

Influence Maximization in Temporal Social Networks Facing the Cold-start Problem *Under Review*

Jun. 2023 - Jan. 2024

- Labeled players with strong or weak ties in an online FPS mobile game.

Inspecting the Influence of Metapaths in Heterogeneous Network Embedding through Visual Analytics *In Progress*

Jan. 2022 - Present

- Researched *the impact of metapaths in heterogeneous network embedding*.
- Worked with experts in WeChat to understand their current bottlenecks and challenges in evaluating metapaths.
- Developed an interactive visual analytics system that helps ML practitioners understand and compare the impact of metapaths from different fine-grained perspectives.

Towards Better Scaffolding the Process of Fund Manager Selection in Fund Investments *Accepted*

IEEE TVCG'24 *Oct. 2021 – Jan. 2024*

- Researched *Fund Manager Selection*.
- Participated in the iterative design of **FMLens**, a visual analytics tool supporting retailers to explore, compare, and simulate their promotion strategies.

PromotionLens: Inspecting Promotion Strategies of Online E-commerce via Visual Analytics *Accepted*

IEEE VIS'22 *Jan. 2021 – Apr. 2022*

- Researched *promotion strategies of online e-commerce*.
- Worked with markerting researchers and practitioners to understand the challeges in measuring the effects of promotion designs.
- Developed **PromotionLens**, a visual analytics tool supporting retailers to explore, compare, and simulate their promotion strategies.

Presentation

A Visual Analytics Approach to Exploring the Feature and Label Space Based on Semi-structured Electronic Medical Records *Melbourne, Australia*

VAHC Poster at IEEE VIS 2023 *Oct. 2023*

PromotionLens: Inspecting Promotion Strategies of Online E-commerce via Visual Analytics *Xining, China*

Conference Presentation at ChinaVis 2022 *Jul. 2022*

Honor

ChinaVis Data Challenge 2023 *Third Price*
Provide guidance to the team. *Jul. 2023*

ChinaVis Data Challenge 2022 *Second Price*
Provide guidance to the team. *Jul. 2022*

Services

Paper Review	CHI, 2024; CHI lbw, 2023; Chinese CHI, 2022
Teaching Assistant	ARTS 1422 - Data Visualization, 2022-23 Fall
Volunteer Teacher	Kedu No. 1 Primary School, Qiannan Buyi and Miao Autonomous Prefecture, China, in 2019
Volunteer	Shanghai Marathon, 2018 & 2020

Key Skills & Programming

Program Language	JavaScript, Python, C Sharp, SQL
Research	Data Visualization, Human-Computer Interaction, Quantitative & Qualitative Research, Interview, Iterative Design
Framework and Tools	D3, Vue, MongoDB, PyTorch, Unity 3D, Cinema 4D, Figma
Languages	Mandarin Chinese, English (IELTS: 6.5), Japanese (beginner), Visualization