Yingcai Wu

Education

Ph.D. in Comp. Sci., Hong Kong University of Science and Technology, Apr. 2010 (Advisor: Huamin Qu)
B.Eng. in Comp. Sci., South China University of Technology, Jul. 2004

Employment

Jan. 2021 – present Full Professor, Zhejiang University
Jan. 2015 – Dec. 2020 ZJU100 Young Professor (Tenure-Track Professor), Zhejiang University
May. 2012 – Dec. 2014 Researcher, Internet Graphics Group, Microsoft Research Asia
May. 2010 – Mar. 2012 Postdoctoral Researcher (Advisor: Kwan-Liu Ma), University of California, Davis

Research Interests

Visual Analytics: Sports Visual Analytics, Urban Visual Analytics.
Information Visualization: Immersive Visualization, Spatiotemporal Visualization, Narrative Visualization.
AI for VIS: Datasets for Visualization, AI-assisted Visualization.
Large-Scale Interactive Data Analysis: Interactive Data Wrangling and Management, Interaction with Big Data.

Professional Activities

Workshop Co-Chair:

- IEEE VIS 2021

Paper/Program Co-Chair:

- IEEE Pacific Visualization 2017
- ChinaVis 2016/2017, VINCI 2014

Guest Editor:

- IEEE Transactions on Visualization and Computer Graphics (Special Section of IEEE PacificVis 2017)
- IEEE Transactions on Multimedia (Special Issue on Visualization and Visual Analytics for Multimedia, 2016)
- ACM Transactions on Intelligent Systems and Technology (Special Issue on Visual Analytics, 2018)
- IEEE Computer Graphics and Applications (Special Issue on Powering Visualization with Deep Learning, 2021)
- Journal of Visualization (Special Issue of ChinaVis 2017)
- Journal of Visual Languages and Computing (Special Issue of ChinaVis 2017)

Area Editor:

- Journal of Software, a Chinese comprehensive academic journal of computer software. It is one of the "Top One Hundred Chinese Scientific and Technological Journals" each year, which represents the highest level for Chinese scientific and technological journals in China.

Meeting Organizer:

- Shonan Meeting No.120 - Visual Analytics: Towards Effective Human-Machine Intelligence

Deputy Director:

- CSIG (China Society of Image and Graphics) Technical Committee on Human Computer Interaction

Program Committee:

- IEEE PacificVis 2011-2013, 2015, 2016, 2018, 2020, 2021
- IEEE VIS (InfoVis) 2015-2017, 2019-2020
- IEEE VIS (VAST) 2018-2020
- IEEE VIS (SciVis) 2014-2017
- EuroVis 2015-2017, 2019-2021
- ACM Multimedia 2019-2020
- ChinaVis 2018-2020, Chinagraph 2019-2020

Selected Funded Projects

CTTA: *Visual Analytics Platform for Table Tennis Data I* (**PI**)
Source: Chinese Table Tennis Association
Amount funded: **RMB 300,000**, Start date: 2020 and duration: 1 year.

CTTA: *Visual Analytics Platform for Table Tennis Data II* (**PI**)
Source: Chinese Table Tennis Association
Amount funded: **RMB 500,000**, Start date: 2019 and duration: 1 year.

NSFC-DFG: *Visual Analytics of Online Text Data Streams* (**PI**)
Source: Joint Sino-German Research Projects funded by The Deutsche Forschungsgemeinschaft (DFG) and The National Natural Science Foundation of China (NSFC)
Co-PI: Prof. Thomas Etrl; Collaborators: Prof. Shixia Liu and Prof. Wei Chen
Amount funded: **RMB 1,800,000**, Start date: 2018 and duration: 3 years.

NSFC: *Correlation Modeling and Visual Analytics of Urban Heterogeneous Data* (**PI**)
Source: National Science Foundation of China
Amount funded: **RMB 2,100,000**, Start date: 2017 and duration: 4 years.

NSFC: *Visual Analytics of Spatiotemporal Information Diffusion in Social Media* (**PI**)
Source: National Science Foundation of China
Amount funded: **RMB 220,000**, Start date: 2016 and duration: 3 years.

NSFC: *Causal Inference Visual Analytics* (**PI**)
Source: National Science Foundation of China, Amount funded: **RMB 570,000**, Start date: 2021 and duration: 4 years.

MOST: *Fundamental Theories and Technical Methods of Big Data Analytics* (**Co-PI**)
Source: National Key R&D Program of China, Amount funded: **RMB 3,380,000**
Start date: 2018 and duration: 3 years.

ZJNSF: *Visual Analytics of Large-Scale Behavior Data* (**PI**)
Source: National Science Foundation of Zhejiang Province, Amount funded: **RMB 50,000**
Start date: 2018 and duration: 3 years.

MSRA: *Visual Analytics of Location Selection* (**PI**)
Source: Microsoft Resarch Asia
Amount funded: **RMB 200,000**, Start date: 2018 and duration: 1 year.

MSRA: *Interactive Animated Story Visualization* (**PI**)
Source: Microsoft Resarch Asia
Amount funded: **RMB 200,000**, Start date: 2020 and duration: 1 year.

Student Supervision Achievements

National Scholarships for Ph.D. Students *(13 students selected out of ~400 every year)*
Di Weng (2020, 2019), Jiachen Wang (2019), Tan Tang (2018), Xiao Xie (2018), Ji Lan (2017)

National Scholarships for Master Students*(15 students selected out of ~800 every year)*
Heming Zhu (2018)

Chu Kochen Scholarship for Undergraduates, the highest recognition for outstanding academic achievement in the university *(12 students selected out of ~24,000)*
Shuhan Liu (2020), Junpei Zhou (2018), Bohan Li (2016)

Microsoft Research Asia Fellowship Nomination Award
Di Weng (2018)

I. Research:

Awards

Awards

Excellent Research and Teaching Award, Zhejiang University, 2019
For his excellent research and teaching in Year 2018-2019.

Dean's Award for Excellence in Research, Zhejiang University, 2017
For his excellent research in Year 2016-2017.

Dean's Award for Excellence in Research, Zhejiang University, 2016
For his excellent research in Year 2015-2016.

Rising Star Award Nomination, ACM China, 2016
For his outstanding research on visualization and human computer interaction.

CVM 2021 Best Paper Award
For the conference paper "Visual Analytics of Impacts of Behavior Adjustments on Scoring Rates in Table Tennis" accepted by the International Conference on Computational Visual Media (CVM 2021).

ChinaVis 2020 Best Paper Award
For the conference paper "EcoLens: Visual Analysis of Ecological Regions in Urban Contexts Using Traffic Data" that appeared in ChinaVis and Journal of Visualization in 2020.

ChinaVis 2020 Honorable Mention Award
For the conference paper "DancingWords: exploring animated word clouds to tell stories" that appeared in ChinaVis and Journal of Visualization in 2020.

IEEE Pacific Visualization 2016 Honorable Mention Award
For the conference paper "PieceStack: Toward Better Understanding of Stacked Graphs" that appeared in IEEE Pacific Visualization and IEEE Transactions on Visualization and Computer Graphics in 2016.

IEEE VAST 2014 Honorable Mention Award
For the conference paper "LoyalTracker: Visualizing Loyalty Dynamics in Search Engines" that appeared in IEEE VAST and IEEE Transactions on Visualization and Computer Graphics in 2014.

IEEE Visualization 2009 Honorable Mention Award
For the conference paper "Perception-based transparency optimization for direct volume rendering" that appeared in IEEE Visualization and IEEE Transactions on Visualization and Computer Graphics in 2009.

IEEE Visualization 2006 and 2007 Best Poster Award Candidate
For posters "Quantitative effectiveness metrics for direct volume rendering" that appeared in IEEE Visualization 2007, and 'Transfer function fusing" that appeared in IEEE Visualization 2006

Publications: Journal

- Note: symbol + indicates the students under the supervision of Yingcai Wu when the associated work was done, symbol # indicates the top-tier journals and conferences, and symbol * indicates the corresponding author.
- Top-tier conferences such as IEEE VIS published accepted papers in journal, e.g., IEEE TVCG.
- Summary: total IEEE/ACM Trans. papers = 43, top-tier journals = 36: IEEE TVCG x 36

Refereed IEEE/ACM Tran. Journal Papers

IEEE TVCG x 36

 # 1. Tac-Miner: Visual Tactic Mining for Multiple Table Tennis Matches
Jiachen Wang[+], Jiang Wu[+], Anqi Cao[+], Zheng Zhou, Hui Zhang, and **Yingcai Wu**[*].
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE Pacific Visualization 2021)
To appear.

 # 2. PlotThread: Creating Expressive Storyline Visualizations using Reinforcement Learning
Tan Tang[+], Renzhong Li[+], Xinke Wu[+], Shuhan Liu[+], Johannes Knittel, Steffen Koch, Thomas Ertl, Lingyun Yu, Peiran Ren, and **Yingcai Wu**[*].
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (InfoVis) 2020)
Vol. 27, no. 2, pp. 294–303, Feb. 2021.

 # 3. A Visual Analytics Approach for Exploratory Causal Analysis: Exploration, Validation, and Applications
Xiao Xie[+], Fan Du[*], and **Yingcai Wu**[*].
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (VAST) 2020)
Vol. 27, no. 2, pp. 1448–1458, Feb. 2021.

 # 4. PassVizor: Toward Better Understanding of the Dynamics of Soccer Passes
Xiao Xie[+], Jiachen Wang[+], Hongye Liang[+], Dazhen Deng[+], Shoubin Cheng, Hui Zhang, Wei Chen, and **Yingcai Wu**[*].
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (VAST) 2020)
Vol. 27, no. 2, pp. 1322–1331, Feb. 2021.

 # 5. What Makes a Data-GIF Understandable?
Xinhuan Shu[+], Aoyu Wu, Junxiu Tang[+], Benjamin Bach, **Yingcai Wu**[*], and Huamin Qu.
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (InfoVis) 2020)
Vol. 27, no. 2, pp. 1492–1502, Feb. 2021.

 # 6. ShuttleSpace: Exploring and Analyzing Movement Trajectory in Immersive Visualization
Shuainan Ye[+], Zhutian Chen, Xiangtong Chu[+], Yifan Wang[+], Siwei Fu, Lejun Shen, Kun Zhou, and **Yingcai Wu**[*].
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (InfoVis) 2020)
Vol. 27, no. 2, pp. 860–869, Feb. 2021.

 # 7. Towards Better Bus Networks: A Visual Analytics Approach
Di Weng[+], Chengbo Zheng[+], Zikun Deng[+], Mingze Ma[+], Jie Bao, Yu Zheng, Mingliang Xu, and **Yingcai Wu**[*].
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (VAST) 2020)
Vol. 27, no. 2, pp. 817–827, Feb. 2021.

 # 8. Exemplar-based Layout Fine-tuning for Node-link Diagrams
Jiacheng Pan, Wei Chen[*], Xiaodong Zhao, Shuyue Zhou, Wei Zeng, Minfeng Zhu, Jian Chen, Siwei Fu, and **Yingcai Wu**[*].
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (InfoVis) 2020)
Vol. 27, no. 2, pp. 1655–1665, Feb. 2021.

 # 9. Tac-Simur: Tactic-based Simulative Visual Analytics of Table Tennis
Jiachen Wang[+], Kejian Zhao[+], Dazhen Deng[+], Anqi Cao[+], Xiao Xie[+], Zheng Zhou, Hui Zhang, and **Yingcai Wu**[*].
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (VAST) 2019)
Vol. 26, no. 1, pp. 407–417, Jan. 2020.

Refereed IEEE/ACM Tran. Journal Papers

IEEE TVCG x 36 (continue)

 # 10. AirVis: Visual Analytics of Air Pollution Propagation
Zikun Deng[+], Di Weng[+], Jiahui Chen[+], Ren Liu[+], Zhibin Wang, Jie Bao, Yu Zheng, and **Yingcai Wu**[*].
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (VAST) 2019)
Vol. 26, no. 1, pp. 800–810, Jan. 2020.

 # 11. MARVisT: Authoring Glyph-Based Visualization in Mobile Augmented Reality
Zhutian Chen[+], Yijia Su, Yifang Wang[+], Qianwen Wang, Huamin Qu, and **Yingcai Wu**[*].
IEEE Transactions on Visualization and Computer Graphics
Vol. 26, no. 8, pp. 2645–2658, Aug. 2020.

12. Efficient Path Query Processing Over Massive Trajectories on the Cloud
Ruiyuan Li, Sijie Ruan, Jie Bao[*], Yanhua Li, **Yingcai Wu**, Liang Hong, and Yu Zheng.
IEEE Transactions on Big Data
Vol. 6, no. 1, pp. 66–79, 2020.

13. Towards Better Detection and Analysis of Massive Spatiotemporal Co-Occurrence Patterns
Yingcai Wu, Di Weng[+], Zikun Deng[+], Jie Bao, Mingliang Xu[*], Zhangye Wang[*], Yu Zheng, Zhiyu Ding, and Wei Chen.
IEEE Transactions on Intelligent Transportation Systems
To appear, 2020.

14. Pareto-Optimal Transit Route Planning with Multi-Objective Monte-Carlo Tree Search
Di Weng[+], Ran Chen[+], Jianhui Zhang, Jie Bao, Yu Zheng, and **Yingcai Wu**[*].
IEEE Transactions on Intelligent Transportation Systems
To appear, 2020.

 # 15. SRVis: Towards Better Spatial Integration in Ranking Visualization
Di Weng[+], Ran Chen[+], Zikun Deng[+], Feiran Wu, Jingmin Chen, and **Yingcai Wu**[*].
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (InfoVis) 2018)
Vol. 25, no. 1, pp. 459–469, Jan. 2019.

 # 16. iStoryline: Effective Convergence to Hand- drawn Storylines
Tan Tang[+], Sadia Rubab[+], Jiewen Lai[+], Weiwei Cui, Lingyun Yu, and **Yingcai Wu**[*].
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (InfoVis) 2018)
Vol. 25, no. 1, pp. 769–778, Jan. 2019.

 # 17. ForVizor: Visualizing Spatio-Temporal Team Formations in Soccer
Yingcai Wu, Xiao Xie[+], Jiachen Wang[+], Dazhen Deng[+], Hongye Liang[+], Hui Zhang, Shoubin Cheng, and Wei Chen[*].
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (VAST) 2018)
Vol. 25, no. 1, pp. 65–75, Jan. 2019.

 # 18. A Semantic-Based Method for Visualizing Large Image Collections
Xiao Xie[+], Xiwen Cai[+], Junpei Zhou[+], Nan Cao, and **Yingcai Wu**[*].
IEEE Transactions on Visualization and Computer Graphics
Vol. 25, no. 7, pp. 2362–2377, Jul. 2019.

19. A User Study on the Capability of Three Geo-Based Features in Analyzing and Locating Trajectories
Xu-Meng Wang, Tianlong Gu[*], Xiaonan Luo, Xiwen Cai, Tianyi Lao, Wenlong Chen, **Yingcai Wu**, Jinhui Yu, and Wei Chen[*].
IEEE Transactions on Intelligent Transportation Systems
Vol. 20, no. 9, pp. 3375-3385, 2019.

Refereed IEEE/ACM Tran. Journal Papers

IEEE TVCG x 36 (continue)

 # 20. Cluster-based Visual Abstraction for Multivariate Scatterplots
Hongsen Liao[+], **Yingcai Wu**, Li Chen[*], and Wei Chen.
IEEE Transactions on Visualization and Computer Graphics
Vol. 24, no. 9, pp. 2531–2545, Sep. 2018.

 # 21. iTTVis: Interactive Visualization of Table Tennis Data
Yingcai Wu[*], Ji Lan[+], Xinhuan Shu[+], Chenyang Ji[+], Kejian Zhao[+], Jiachen Wang[+], and Hui Zhang.
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (InfoVis) 2017)
Vol. 24, no. 1, pp. 709–718, Jan. 2018.

22. Mining the Most Influential k-Location Set from Massive Trajectories
Yuhong Li[*], Jie Bao, Yanhua Li, **Yingcai Wu**, Zhiguo Gong, and Yu Zheng.
IEEE Transactions on Big Data
Vol. 4, no. 4, pp. 556–570, 2018.

23. SocialWave: Visual Analysis of Spatio-temporal Diffusion of Information on Social Media
Guodao Sun[+], Tan Tang[+], Tai-Quan Peng, Ronghua Liang, and **Yingcai Wu**[*].
ACM Transactions Intelligent Systems and Technology
Vol. 9, no. 2, pp. 15:1–15:23, 2018.

 # 24. StreamExplorer: A Multi-Stage System for Visually Exploring Events in Social Streams
Yingcai Wu[*], Zhutian Chen[+], Guodao Sun[+], Xiao Xie[+], Nan Cao, Shixia Liu, and Weiwei Cui.
IEEE Transactions on Visualization and Computer Graphics
Vol. 23, no. 10, pp. 2758–2772, Oct. 2017.

 # 25. Embedding Spatio-Temporal Information into Maps by Route-Zooming
Guodao Sun[+], Ronghua Liang[*], Huamin Qu, and **Yingcai Wu**.
IEEE Transactions on Visualization and Computer Graphics
Vol. 23, no. 5, pp. 1506–1519, May. 2017.

 # 26. SmartAdP: Visual Analytics of Large-scale Taxi Trajectories for Selecting Billboard Locations
Dongyu Liu[+], Di Weng[+], Yuhong Li, Jie Bao, Yu Zheng, Huamin Qu, and **Yingcai Wu**[*].
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (VAST) 2016)
Vol. 23, no. 1, pp. 1–10, Jan. 2017.

 # 27. PeakVizor: Visual Analytics of Peaks in Video Clickstreams from Massive Open Online Courses
Qing Chen[+], Yuanzhe Chen[+], Dongyu Liu[+], Conglei Shi, **Yingcai Wu**[*], and Huamin Qu.
IEEE Transactions on Visualization and Computer Graphics
Vol. 22, no. 10, pp. 2315–2330, Oct. 2016.

 # 28. PieceStack: Toward Better Understanding of Stacked Graphs
Tongshuang Wu, **Yingcai Wu**, Conglei Shi, Huamin Qu, and Weiwei Cui[*].
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE Pacific Visualization 2016)
Vol. 22, no. 6, pp. 1640–1651, Jun. 2016.

29. A Survey on Visual Analytics of Social Media Data
Yingcai Wu, Nan Cao, David Gotz, Yap-Peng Tan, and Daniel A. Keim.
IEEE Transactions on Multimedia
Vol. 18, no. 11, pp. 2135–2148, 2016.

 # 30. LoyalTracker: Visualizing Loyalty Dynamics in Search Engines
Conglei Shi[+], **Yingcai Wu**, Shixia Liu[*], Hong Zhou, and Huamin Qu.
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (VAST) 2014)
Vol. 20, no. 12, pp. 1733–1742, 2014.

Refereed IEEE/ACM Tran. Journal Papers

IEEE TVCG x 36 (continue)

 # 31. EvoRiver: Visual Analysis of Topic Coopetition on Social Media
Guodao Sun[+], **Yingcai Wu**, Shixia Liu[*], Tai-Quan Peng, Jonathan J. H. Zhu, and Ronghua Liang.
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (VAST) 2014)
Vol. 20, no. 12, pp. 1753–1762, 2014.

 # 32. OpinionFlow: Visual Analysis of Opinion Diffusion on Social Media
Yingcai Wu, Shixia Liu[*], Kai Yan, Mengchen Liu, and Fangzhao Wu.
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (VAST) 2014)
Vol. 20, no. 12, pp. 1763–1772, 2014.

 # 33. ViSizer: A Visualization Resizing Framework
Yingcai Wu, Xiaotong Liu, Shixia Liu[*], and Kwan-Liu Ma.
IEEE Transactions on Visualization and Computer Graphics
Vol. 19, no. 2, pp. 278–290, 2013.

 # 34. Perceptually-Based Depth-Ordering Enhancement for Direct Volume Rendering
Lin Zheng, **Yingcai Wu**, and Kwan-Liu Ma.
IEEE Transactions on Visualization and Computer Graphics
Vol. 19, no. 3, pp. 446–459, 2013.

 # 35. Visual Analysis of Topic Competition on Social Media
Panpan Xu[+], **Yingcai Wu**[*], Enxun Wei[+], Tai-Quan Peng, Shixia Liu, Jonathan J. H. Zhu, and Huamin Qu.
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (VAST) 2013)
Vol. 19, no. 12, pp. 2012–2021, 2013.

 # 36. StoryFlow: Tracking the Evolution of Stories
Shixia Liu, **Yingcai Wu**[*], Enxun Wei[+], Mengchen Liu[+], and Yang Liu.
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (VAST) 2013)
Vol. 19, no. 12, pp. 2436–2445, 2013.

 # 37. Visualizing Flow of Uncertainty through Analytical Processes
Yingcai Wu, Guo-Xun Yuan, and Kwan-Liu Ma.
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (InfoVis) 2012)
Vol. 18, no. 12, pp. 2526–2535, 2012.

 # 38. OpinionSeer: Interactive Visualization of Hotel Customer Feedback
Yingcai Wu, Furu Wei, Shixia Liu, Norman Au, Weiwei Cui, Hong Zhou, and Huamin Qu.
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (VAST) 2010)
Vol. 16, no. 6, pp. 1109–1118, 2010.

 # 39. Perception-Based Transparency Optimization for Direct Volume Rendering
Ming-Yuen Chan, **Yingcai Wu**, Wai-Ho Mak, Wei Chen, and Huamin Qu.
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (SciVis) 2009)
Vol. 15, no. 6, pp. 1283–1290, 2009.

 # 40. Interactive Visual Optimization and Analysis for RFID Benchmarking
Yingcai Wu, Ka-Kei Chung, Huamin Qu, Xiaoru Yuan, and S. C. Cheung.
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (SciVis) 2009)
Vol. 15, no. 6, pp. 1335–1342, 2009.

 # 41. Focus+Context Route Zooming and Information Overlay in 3D Urban Environments
Huamin Qu, Haomian Wang, Weiwei Cui, **Yingcai Wu**, and Ming-Yuen Chan.
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (SciVis) 2009)
Vol. 15, no. 6, pp. 1547–1554, 2009.

Refereed IEEE/ACM Tran. Journal Papers

IEEE TVCG x 36 (continue)

 # 42. Relation-Aware Volume Exploration Pipeline
Ming-Yuen Chan, Huamin Qu, Ka-Kei Chung, Wai-Ho Mak, and **Yingcai Wu**.
IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS (SciVis) 2008)
Vol. 14, no. 6, pp. 1683–1690, 2008.

 # 43. Interactive Transfer Function Design Based on Editing Direct Volume Rendered Images
Yingcai Wu, and Huamin Qu.
IEEE Transactions on Visualization and Computer Graphics
Vol. 13, no. 5, pp. 1027–1040, 2007.

Refereed Journal Papers (others)

44. Design guidelines for augmenting short-form videos using animated data visualizations
Tan Tang[+], Junxiu Tang[+], Jiayi Hong[+], Lingyun Yu, Peiran Ren, and **Yingcai Wu**[*].
Journal of Visualization, ChinaVis 2020
Vol. 23, no. 4, pp. 707–720, 2020.

45. DancingWords: exploring animated word clouds to tell stories
Xinhuan Shu[+], Jiang Wu[+], Xinke Wu[+], Hongye Liang[+], Weiwei Cui, and **Yingcai Wu**[*].
Journal of Visualization, ChinaVis 2020
To appear, 2020.

46. Examining Interaction Techniques in Data Visualization Authoring Tools from the Perspective of Goals and Human Cognition: A Survey
Sadia Rubab[+], Junxiu Tang[+], and **Yingcai Wu**[*].
Journal of Visualization
To appear, 2020.

47. EcoLens: Visual Analysis of Ecological Regions in Urban Contexts Using Traffic Data
Zhuochen Jin, Nan Cao, Yang Shi, Wenchao Wu, and **Yingcai Wu**.
Journal of Visualization, ChinaVis 2020
To appear, 2020.

48. RankBrushers: interactive analysis of temporal ranking ensembles
Dongming Han, Jiacheng Pan, Fangzhou Guo, Xiaonan Luo, **Yingcai Wu**, Wenting Zheng, and Wei Chen.
Journal of Visualization, ChinaVis 2019
Vol. 22, no. 6, pp. 1241–1255, 2019.

49. Toward the better modeling and visualization of uncertainty for streaming data
Tan Tang[+], Kaijuan Yuan[+], Junxiu Tang[+], and **Yingcai Wu**[*].
Journal of Visualization, ChinaVis 2019
Vol. 22, no. 1, pp. 79–93, 2019.

50. BeXplorer: Visual analytics of dynamic interplay between communication and purchase behaviors in MMORPGs
Junhua Lu[+], Xiao Xie[+], Ji Lan[+], Tai-Quan Peng, **Yingcai Wu**[*], and Wei Chen[*].
Visual Informatics
Vol. 3, no. 2, pp. 87–101, 2019.

51. A Study of the Effect of Doughnut Chart Parameters on Proportion Estimation Accuracy
Xiwen Cai[+], Konstantinos Efstathiou, Xiao Xie[+], **Yingcai Wu**[*], Yang Shi, and Lingyun Yu.
Computer Graphics Forum
Vol. 37, no. 3, pp. 300–312, 2018.

Refereed Journal Papers (others, continue)

52. Steering data quality with visual analytics: The complexity challenge
Shixia Liu, Gennady L. Andrienko, **Yingcai Wu**, Nan Cao, Liu Jiang, Conglei Shi, Yu-Shuen Wang, and Seokhee Hong.
Visual Informatics
Vol. 2, no. 4, pp. 191-197, 2018.

53. egoComp: A node-link-based technique for visual comparison of ego-networks
Dongyu Liu[+], Fangzhou Guo[*], Bowen Deng, Huamin Qu, and **Yingcai Wu**[*].
Information Visualization
Vol. 16, no. 3, pp. 179–189, 2017.

54. TieVis: visual analytics of evolution of interpersonal ties
Fangzhou Guo, Wei Chen[*], Tao Lin, Biao Zhu, Fan Zhang, **Yingcai Wu**, and Huamin Qu.
Journal of Visualization
Vol. 20, no. 4, pp. 905–918, 2017.

55. GameLifeVis: visual analysis of behavior evolutions in multiplayer online games
Wei Chen[*], Junhua Lu, Dingke Kong, Zhiqi Liu, Yandi Shen, Yinyin Chen, Jingxuan He, Shu Liu, Ye Qi, and **Yingcai Wu**.
Journal of Visualization
Vol. 20, no. 3, pp. 651–665, 2017.

56. UNMAT: Visual comparison and exploration of uncertainty in large graph sampling
Tan Tang[+], Sufei Wang[+], Yunfeng Li[+], Bohan Li[+], and **Yingcai Wu**[*].
Journal of Visual Languages & Computing
Vol. 41, pp. 71–78, 2017.

57. Exploring the design space of immersive urban analytics
Zhutian Chen[+], Yifang Wang[+], Tianchen Sun[+], Xiang Gao, Wei Chen, Zhigeng Pan, Huamin Qu, and **Yingcai Wu**[*].
Visual Informatics
Vol. 1, no. 2, pp. 132–142, 2017.

58. Examining the effects of network externalities, density, and closure on in-game currency price in online games
Xuexin Xu, Xiaodong Yang, Junhua Lu, Ji Lan, Tai-Quan Peng, **Yingcai Wu**, and Wei Chen.
Internet Research
Vol. 27, no. 4, pp. 924–941, 2017.

59. Similarity Voting based Viewpoint Selection for Volumes
Yubo Tao, Qirui Wang, Wei Chen[*], **Yingcai Wu**, Hai Lin.
Computer Graphics Forum
Vol. 35, no. 3, pp. 391–400, 2016.

60. A survey on information visualization: recent advances and challenges
Shixia Liu, Weiwei Cui, **Yingcai Wu**, and Mengchen Liu.
Visual Computer
Vol. 30, no. 12, pp. 1373–1393, 2014.

61. A Survey of Visual Analytics Techniques and Applications: State-of-the-Art Research and Future Challenges
Guodao Sun, **Yingcai Wu**[*], Ronghua Liang, and Shi-Xia Liu.
Journal of Computer Science and Technology
Vol. 28, no. 5, pp. 852–867, 2013.

Refereed Journal Papers (others, continue)

62. Semantic-Preserving Word Clouds by Seam Carving
Yingcai Wu, Thomas Provan, Furu Wei, Shixia Liu, and Kwan-Liu Ma.
Computer Graphics Forum, EuroVis 2011
Vol. 30, no. 3, pp. 741–750, 2011.

63. Visual Recommendations for Network Navigation
Tarik Crnovrsanin, Isaac Liao, **Yingcai Wu**, and Kwan-Liu Ma.
Computer Graphics Forum, EuroVis 2011
Vol. 30, no. 3, pp. 1081–1090, 2011.

64. Visibility-Aware Direct Volume Rendering
Wai-Ho Mak, **Yingcai Wu***, Ming-Yuen Chan, and Huamin Qu.
Journal of Computer Science and Technology
Vol. 26, no. 2, pp. 217–228, 2011.

65. Context-Preserving, Dynamic Word Cloud Visualization
Weiwei Cui, **Yingcai Wu**, Shixia Liu, Furu Wei, Michelle X. Zhou, and Huamin Qu.
IEEE Computer Graphics and Applications
Vol. 30, no. 6, pp. 42–53, 2010.

66. Splatting the Lines in Parallel Coordinates
Hong Zhou, Weiwei Cui, Huamin Qu, **Yingcai Wu**, Xiaoru Yuan, and Wei Zhuo.
Computer Graphics Forum, EuroVis 2009
Vol. 28, no. 3, pp. 759–766, 2009.

Publications: Conference

- Note: symbol + indicates the students under the supervision of Yingcai Wu when the associated work was done, symbol # indicates the top-tier journals and conferences, and symbol * indicates the corresponding author.
- Top-tier conferences such as IEEE VIS published accepted papers in journal, e.g., IEEE TVCG.
- Summary: total top-tier conferences = 31: IEEE VIS x 28, ACM CHI x 2, UbiComp X 1.

Refereed Papers accepted by IEEE VIS x 28

 # 1. PlotThread: Creating Expressive Storyline Visualizations using Reinforcement Learning
Tan Tang+, Renzhong Li+, Xinke Wu+, Shuhan Liu+, Johannes Knittel, Steffen Koch, Thomas Ertl, Lingyun Yu, Peiran Ren, and **Yingcai Wu***.
Proceedings of IEEE VIS (InfoVis) 2020, also published in a special issue of IEEE Transactions on Visualization and Computer Graphics, to appear, 2021.

 # 2. A Visual Analytics Approach for Exploratory Causal Analysis: Exploration, Validation, and Applications
Xiao Xie+, Fan Du*, and **Yingcai Wu***.
Proceedings of IEEE VIS (VAST) 2020, also published in a special issue of IEEE Transactions on Visualization and Computer Graphics, to appear, 2021.

 # 3. PassVizor: Toward Better Understanding of the Dynamics of Soccer Passes
Xiao Xie+, Jiachen Wang+, Hongye Liang+, Dazhen Deng+, Shoubin Cheng, Hui Zhang, Wei Chen, and **Yingcai Wu***.
Proceedings of IEEE VIS (VAST) 2020, also published in a special issue of IEEE Transactions on Visualization and Computer Graphics, to appear, 2021.

 # 4. What Makes a Data-GIF Understandable?
Xinhuan Shu+, Aoyu Wu, Junxiu Tang+, Benjamin Bach, **Yingcai Wu***, and Huamin Qu.
Proceedings of IEEE VIS (InfoVis) 2020, also published in a special issue of IEEE Transactions on Visualization and Computer Graphics, to appear, 2021.

Refereed Papers accepted by IEEE VIS (continue)

 # 5. ShuttleSpace: Exploring and Analyzing Movement Trajectory in Immersive Visualization
Shuainan Ye[+], Zhutian Chen, Xiangtong Chu[+], Yifan Wang[+], Siwei Fu, Lejun Shen, Kun Zhou, and **Yingcai Wu**[*].
Proceedings of IEEE VIS (VAST) 2020, also published in a special issue of IEEE Transactions on Visualization and Computer Graphics, to appear, 2021.

 # 6. Towards Better Bus Networks: A Visual Analytics Approach
Di Weng[+], Chengbo Zheng[+], Zikun Deng[+], Mingze Ma[+], Jie Bao, Yu Zheng, Mingliang Xu, and **Yingcai Wu**[*].
Proceedings of IEEE VIS (VAST) 2020, also published in a special issue of IEEE Transactions on Visualization and Computer Graphics, to appear, 2021.

 # 7. Exemplar-based Layout Fine-tuning for Node-link Diagrams
Jiacheng Pan, Wei Chen[*], Xiaodong Zhao, Shuyue Zhou, Wei Zeng, Minfeng Zhu, Jian Chen, Siwei Fu, and **Yingcai Wu**[*].
Proceedings of IEEE VIS (VAST) 2020, also published in a special issue of IEEE Transactions on Visualization and Computer Graphics, to appear, 2021.

 # 8. Visual Analytics of Multivariate Event Sequence Data in Racquet Sports
Jiang Wu[+], Ziyang Guo[+], Zuobin Wang[+], Qingyang Xu[+], and **Yingcai Wu**[*].
Proceedings of IEEE VIS (VAST) 2020

 # 9. Narrative Transitions in Data Videos
Junxiu Tang[+], Lingyun Yu, Tan Tang[+], Xinhuan Shu[*], Lu Ying[+], Yuhua Zhou[+], Peiran Ren, and **Yingcai Wu**[*].
Proceedings of IEEE VIS (InfoVis) 2020, short paper.

 # 10. Tac-Simur: Tactic-based Simulative Visual Analytics of Table Tennis
Jiachen Wang[+], Kejian Zhao[+], Dazhen Deng[+], Anqi Cao[+], Xiao Xie[+], Zheng Zhou, Hui Zhang, and **Yingcai Wu**[*].
Proceedings of IEEE VIS (VAST) 2019, also published in a special issue of IEEE Transactions on Visualization and Computer Graphics, vol. 26, no. 1, pp. 407–417, Jan. 2020.

 # 11. AirVis: Visual Analytics of Air Pollution Propagation
Zikun Deng[+], Di Weng[+], Jiahui Chen[+], Ren Liu[+], Zhibin Wang, Jie Bao, Yu Zheng, and **Yingcai Wu**[*].
Proceedings of IEEE VIS (VAST) 2019, also published in a special issue of IEEE Transactions on Visualization and Computer Graphics, vol. 26, no. 1, pp. 800–810, Jan. 2020.

 # 12. SRVis: Towards Better Spatial Integration in Ranking Visualization
Di Weng[+], Ran Chen[+], Zikun Deng[+], Feiran Wu, Jingmin Chen, and **Yingcai Wu**[*].
Proceedings of IEEE VIS (InfoVis) 2018, also published in a special issue of IEEE Transactions on Visualization and Computer Graphics, vol. 25, no. 1, pp. 459–469, Jan. 2019.

 # 13. iStoryline: Effective Convergence to Hand- drawn Storylines
Tan Tang[+], Sadia Rubab[+], Jiewen Lai[+], Weiwei Cui, Lingyun Yu, and **Yingcai Wu**[*].
Proceedings of IEEE VIS (InfoVis) 2018, also published in a special issue of IEEE Transactions on Visualization and Computer Graphics, vol. 25, no. 1, pp. 769–778, Jan. 2019.

 # 14. ForVizor: Visualizing Spatio-Temporal Team Formations in Soccer
Yingcai Wu, Xiao Xie[+], Jiachen Wang[+], Dazhen Deng[+], Hongye Liang[+], Hui Zhang, Shoubin Cheng, and Wei Chen[*].
Proceedings of IEEE VIS (VAST) 2018, also published in a special issue of IEEE Transactions on Visualization and Computer Graphics, vol. 25, no. 1, pp. 65–75, Jan. 2019.

 # 15. iTTVis: Interactive Visualization of Table Tennis Data
Yingcai Wu[*], Ji Lan[+], Xinhuan Shu[+], Chenyang Ji[+], Kejian Zhao[+], Jiachen Wang[+], and Hui Zhang.
Proceedings of IEEE VIS (VAST) 2017, also published in a special issue of IEEE Transactions on Visualization and Computer Graphics, vol. 24, no. 1, pp. 709–718, Jan. 2018.

Refereed Papers accepted by IEEE VIS (continue)

 # 16. SmartAdP: Visual Analytics of Large-scale Taxi Trajectories for Selecting Billboard Locations
Dongyu Liu[+], Di Weng[+], Yuhong Li, Jie Bao, Yu Zheng, Huamin Qu, and **Yingcai Wu**[*].
Proceedings of IEEE VIS (VAST) 2016, also published in a special issue of IEEE Transactions on Visualization and Computer Graphics, vol. 23, no. 1, pp. 1–10, Jan. 2017.

 # 17. A Visual Voting Framework for Weather Forecast Calibration
Hongsen Liao[+], **Yingcai Wu**, Li Chen[*], Thomas M. Hamill, Yunhai Wang, Kan Dai, Hui Zhang, and Wei Chen.
Proceedings of IEEE VIS (SciVis) 2015, conference track

 # 18. LoyalTracker: Visualizing Loyalty Dynamics in Search Engines ***(honorable mention)***
Conglei Shi[+], **Yingcai Wu**, Shixia Liu[*], Hong Zhou, and Huamin Qu.
Proceedings of IEEE VIS (VAST) 2014, also published in IEEE Transactions on Visualization and Computer Graphics, vol. 20, no. 12, pp. 1733–1742, 2014.

 # 19. EvoRiver: Visual Analysis of Topic Coopetition on Social Media
Guodao Sun[+], **Yingcai Wu**, Shixia Liu[*], Tai-Quan Peng, Jonathan J. H. Zhu, and Ronghua Liang.
Proceedings of IEEE VIS (VAST) 2014, also published in IEEE Transactions on Visualization and Computer Graphics, vol. 20, no. 12, pp. 1753–1762, 2014.

 # 20. OpinionFlow: Visual Analysis of Opinion Diffusion on Social Media
Yingcai Wu, Shixia Liu[*], Kai Yan, Mengchen Liu, and Fangzhao Wu.
Proceedings of IEEE VIS (VAST) 2014, also published in IEEE Transactions on Visualization and Computer Graphics, vol. 20, no. 12, pp. 1763–1772, 2014.

 # 21. Visual Analysis of Topic Competition on Social Media
Panpan Xu[+], **Yingcai Wu**[*], Enxun Wei[+], Tai-Quan Peng, Shixia Liu, Jonathan J. H. Zhu, and Huamin Qu.
Proceedings of IEEE VIS (VAST) 2013, also published in IEEE Transactions on Visualization and Computer Graphics, vol. 19, no. 12, pp. 2012–2021, 2013.

 # 22. StoryFlow: Tracking the Evolution of Stories
Shixia Liu, **Yingcai Wu**[*], Enxun Wei[+], Mengchen Liu[+], and Yang Liu.
Proceedings of IEEE VIS (InfoVis) 2013, also published in IEEE Transactions on Visualization and Computer Graphics, vol. 19, no. 12, pp. 2436–2445, 2013.

 # 23. Visualizing Flow of Uncertainty through Analytical Processes
Yingcai Wu, Guo-Xun Yuan, and Kwan-Liu Ma.
Proceedings of IEEE VIS (InfoVis) 2012, also published in IEEE Transactions on Visualization and Computer Graphics, vol. 18, no. 12, pp. 2526–2535, 2012.

 # 24. OpinionSeer: Interactive Visualization of Hotel Customer Feedback
Yingcai Wu, Furu Wei, Shixia Liu, Norman Au, Weiwei Cui, Hong Zhou, and Huamin Qu.
Proceedings of IEEE VIS (InfoVis) 2010, also published in IEEE Transactions on Visualization and Computer Graphics, vol. 16, no. 6, pp. 1109–1118, 2010.

 # 25. Perception-Based Transparency Optimization for Direct Volume Rendering ***(honorable mention)***
Ming-Yuen Chan, **Yingcai Wu**, Wai-Ho Mak, Wei Chen, and Huamin Qu.
Proceedings of IEEE VIS (SciVis) 2009, also published in IEEE Transactions on Visualization and Computer Graphics, vol. 15, no. 6, pp. 1283–1290, 2009.

 # 26. Interactive Visual Optimization and Analysis for RFID Benchmarking
Yingcai Wu, Ka-Kei Chung, Huamin Qu, Xiaoru Yuan, and S. C. Cheung.
Proceedings of IEEE VIS (SciVis) 2009, also published in IEEE Transactions on Visualization and Computer Graphics, vol. 15, no. 6, pp. 1335–1342, 2009.

Refereed Papers accepted by IEEE VIS (continue)

 # 27. Focus+Context Route Zooming and Information Overlay in 3D Urban Environments
Huamin Qu, Haomian Wang, Weiwei Cui, **Yingcai Wu**, and Ming-Yuen Chan.
Proceedings of IEEE VIS (SciVis) 2009, also published in IEEE Transactions on Visualization and Computer Graphics, vol. 15, no. 6, pp. 1547–1554, 2009.

 # 28. Relation-Aware Volume Exploration Pipeline
Ming-Yuen Chan, Huamin Qu, Ka-Kei Chung, Wai-Ho Mak, and **Yingcai Wu**.
Proceedings of IEEE VIS (SciVis) 2008, also published in IEEE Transactions on Visualization and Computer Graphics, vol. 14, no. 6, pp. 1683–1690, 2008.

Refereed Papers accepted by ACM CHI x 3

 # 1. EventAnchor: Reducing Human Interactions in Event Annotation of Racket Sports Videos
Dazhen Deng[+], Jiang Wu[+], Jiachen Wang[+], Yihong Wu[+], Xiao Xie[+], Zheng Zhou, Hui Zhang, Xiaolong (Luke) Zhang, and **Yingcai Wu**[*].
Proceedings of ACM CHI 2021

 # 2. HomeFinder Revisited: Finding Ideal Homes with Reachability-Centric Multi-Criteria Decision Making
Di Weng[+], Heming Zhu[+], Jie Bao, Yu Zheng, and **Yingcai Wu**[*].
Proceedings of ACM CHI 2018

 # 3. Breaking news on twitter
Mengdie Hu, Shixia Liu, Furu Wei, **Yingcai Wu**, John T. Stasko, and Kwan-Liu Ma.
Proceedings of ACM CHI 2012

Refereed Conference Papers (others)

1. Tac-Miner: Visual Tactic Mining for Multiple Table Tennis Matches
Jiachen Wang[+], Jiang Wu[+], Anqi Cao[+], Zheng Zhou, Hui Zhang, and **Yingcai Wu**[*].
Proceedings of IEEE Pacific Visualization 2021, also published in IEEE Transactions on Visualization and Computer Graphics.

 # 2. Dynamic Public Resource Allocation Based on Human Mobility Prediction
Sijie Ruan, Jie Bao[*], Yuxuan Liang, Ruiyuan Li, Tianfu He, Chuishi Meng, Yanhua Li, **Yingcai Wu**, and Yu Zheng[*].
Proceedings of ACM UbiComp 2020

3. DancingWords: exploring animated word clouds to tell stories ***(honorable mention)***
Xinhuan Shu[+], Jiang Wu[+], Xinke Wu[+], Hongye Liang[+], Weiwei Cui, and **Yingcai Wu**[*].
Proceedings of ChinaVis 2020, also published in Journal of Visualization, to appear, 2020.

4. EcoLens: Visual Analysis of Ecological Regions in Urban Contexts Using Traffic Data ***(best paper)***
Zhuochen Jin, Nan Cao[*], Yang Shi, Wenchao Wu, and **Yingcai Wu**.
Proceedings of ChinaVis 2020, also published in Journal of Visualization, to appear, 2020. To appear, 2020.

5. Design guidelines for augmenting short-form videos using animated data visualizations
Tan Tang[+], Junxiu Tang[+], Jiayi Hong[+], Lingyun Yu, Peiran Ren, and **Yingcai Wu**[*].
Proceedings of ChinaVis 2020, also published in Journal of Visualization, vol. 23, no. 4, pp. 707–720, 2020.

6. Visual Analytics of Dynamic Interplay Between Behaviors in MMORPGs
Junhua Lu[+], Xiao Xie[+], Ji Lan[+], Tai-Quan Peng, Wei Chen[*], and **Yingcai Wu**.
Proceedings of ChinaVis 2019, also published in Journal of Visualization, vol. 22, no. 6, pp. 1241–1255, 2019.

7. RankBrushers: interactive analysis of temporal ranking ensembles
Dongming Han, Jiacheng Pan, Fangzhou Guo, Xiaonan Luo, **Yingcai Wu**, Wenting Zheng, and Wei Chen[*].
Proceedings of IEEE Pacific Visualization 2019

8. Toward the better modeling and visualization of uncertainty for streaming data
Tan Tang[+], Kaijuan Yuan[+], Junxiu Tang[+], and **Yingcai Wu**[*].
Proceedings of ChinaVis 2019, also published in Journal of Visualization, vol. 22, no. 1, pp. 79–93, 2019.

Refereed Conference Papers (others, continue)

9. Querying Massive Trajectories by Path on the Cloud
Ruiyuan Li, Sijie Ruan, Jie Bao, Yanhua Li, **Yingcai Wu**, and Yu Zheng[*].
Proceedings of ACM SIGSPATIAL/GIS 2017

 # 10. PieceStack: Toward Better Understanding of Stacked Graphs ***(honorable mention)***
Tongshuang Wu, **Yingcai Wu**, Conglei Shi, Huamin Qu, and Weiwei Cui[*].
IEEE Pacific Visualization 2016, also published in IEEE Transactions on Visualization and Computer Graphics, vol. 22, no. 6, pp. 1640–1651, Jun. 2016.

11. Mining the most influential k-location set from massive trajectories
Yuhong Li, Jie Bao, Yanhua Li, **Yingcai Wu**, Zhiguo Gong, and Yu Zheng.
Proceedings of ACM SIGSPATIAL/GIS 2016

12. Semantic-Preserving Word Clouds by Seam Carving
Yingcai Wu, Thomas Provan, Furu Wei, Shixia Liu, and Kwan-Liu Ma.
Proceedings of EuroVis 2011, also published in Computer Graphics Forum, vol. 30, no. 3, pp. 741–750, 2011.

13. Visual Recommendations for Network Navigation
Tarik Crnovrsanin, Isaac Liao, **Yingcai Wu**, and Kwan-Liu Ma.
Proceedings of EuroVis 2011, also published in Computer Graphics Forum, vol. 30, no. 3, pp. 1081–1090, 2011.

14. Scalable Visualization Resizing Framework
Yingcai Wu, and Kwan-Liu Ma.
Proceedings of AAAI Workshop on Scalable Integration of Analytics and Visualization 2011

15. Quantitative effectiveness measures for direct volume rendered images
Yingcai Wu, Huamin Qu, Ka-Kei Chung, Ming-Yuen Chan, and Hong Zhou.
Proceedings of IEEE Pacific Visualization (PacificVis) 2010

16. Context preserving dynamic word cloud visualization
Weiwei Cui, **Yingcai Wu**, Shixia Liu, Furu Wei, Michelle X. Zhou, and Huamin Qu.
Proceedings of IEEE Pacific Visualization (PacificVis) 2010

17. Relation-Aware Spreadsheets for Multimodal Volume Segmentation and Visualization
Lin Zheng, **Yingcai Wu**, and Kwan-Liu Ma.
Proceedings of International Workshop on Machine Learning in Medical Imaging (MLMI) 2010

18. Splatting the Lines in Parallel Coordinates
Hong Zhou, Weiwei Cui, Huamin Qu, **Yingcai Wu**, Xiaoru Yuan, and Wei Zhuo.
Proceedings of EuroVis 2009, also published in Computer Graphics Forum, vol. 28, no. 3, pp. 759–766, 2009.

19. Integrated Tourist Navigation System
Haomian Wang, Weiwei Cui, Hong Zhou, **Yingcai Wu**, and Huamin Qu.
Proceedings of International Conference on Computer Graphics, Imaging and Visualization: New Advances and Trends (CGIV) 2009

20. Knowledge Discovery by Network Visualization
Hong Zhou, **Yingcai Wu**, Ming-Yuen Chan, Huamin Qu, Zhengmao Xie, and Xiaoming Li.
Proceedings of International Conference on Technologies for E-Learning and Digital Entertainment (Edutainment) 2008

21. VoxelBars: An Informative Interface for Volume Visualization
Wai-Ho Mak, Ming-Yuen Chan, **Yingcai Wu**, Ka-Kei Chung, and Huamin Qu.
Proceedings of International Symposium on Advances in Visual Computing (ISVC) 2008

Refereed Conference Papers (others, continue)

22. Quality Enhancement of Direct Volume Rendered Images
Ming-Yuen Chan, **Yingcai Wu**, and Huamin Qu.
Proceedings of IEEE VGTC International Symposium on Volume Graphics (VG@Eurographics) 2007

23. Palette-Style Volume Visualization
Yingcai Wu, Anbang Xu, Ming-Yuen Chan, Huamin Qu, and Ping Guo.
Proceedings of IEEE VGTC International Symposium on Volume Graphics 2007

24. MIP-Guided Vascular Image Visualization with Multi-Dimensional Transfer Function
Ming-Yuen Chan, **Yingcai Wu**, Huamin Qu, Albert C. S. Chung, and Wilbur C. K. Wong.
Proceedings of Computer Graphics International Conference (CGI) 2006

25. Controllable and Progressive Edge Clustering for Large Networks
Huamin Qu, Hong Zhou, and **Yingcai Wu**.
Proceedings of International Symposium on Advances in Visual Computing (ISVC) 2006

26. Fusing Features in Direct Volume Rendered Images
Yingcai Wu, Huamin Qu, Hong Zhou, and Ming-Yuen Chan.
Proceedings of International Symposium on Advances in Visual Computing (ISVC) 2006

27. Viewpoint Selection for Angiographic Volume
Ming-Yuen Chan, Huamin Qu, **Yingcai Wu**, and Hong Zhou.
Proceedings of International Symposium on Advances in Visual Computing (ISVC) 2006

28. Natural Textures for Weather Data Visualization
Ying Tang, Huamin Qu, **Yingcai Wu**, and Hong Zhou.
Proceedings of International Conference on Information Visualisation (IV) 2006

29. Focus + Context Visualization with Animation
Yingcai Wu, Huamin Qu, Hong Zhou, and Ming-Yuen Chan.
Proceedings of Advances in Image and Video Technology, First Pacific Rim Symposium (PSIVT) 2006

Publications: Others

- Summary: posters x 2; China patents x 12; and book x 1.

Refereed Poster Presentations

30. Quantitative effectiveness metrics for direct volume rendering ***(best poster candidate)***
Yingcai Wu, Huamin Qu, Ka-Kei Chung, Wai-Ho Mak, and Anbang Xu.
IEEE Visualization 2007

31. Transfer function fusing ***(best poster candidate)***
Yingcai Wu, Huamin Qu, Hong Zhou, and Ming-Yuen Chan.
IEEE Visualization 2006

Patents Received

An Intelligent Interactive Data Collection System for Table Tennis Match Videos
China patent, 201911233818.7, received on 2020-08-31, 1st inventor.

A System for Reducing and Depicting Uncertainties in Streaming Big Data
China patent, 201911309625.6, received on 2020-08-21, 1st inventor.

A System for Collecting Table Tennis Match Data
China patent, ZL 201910939527.3, received on 2020-08-18, 1st inventor.

A System for Interactive Home Location Selection
China patent, ZL 201711458020.3, received on 2020-07-24, 1st inventor.

A Method for Generating Data-Driven Reachability Probabilities and Regions
China patent, ZL 201711195575.3, received on 2020-07-24, 1st inventor.

A Method for Detecting Game Cheaters with Incremental Decision Trees
China patent, ZL 201711045371.1, received on 2020-06-16, 3rd inventor.

A Method for Extracting and Visualizing Semantic Information in Large-Scale Image Datasets
China patent, ZL 201711409040.1, received on 2020-02-21, 1st inventor.

A Visual Analytics System for Inspecting Table Tennis Strategies via Hit Sequences
China patent, ZL 201811455395.9, received on 2020-02-21, 1st inventor.

A Visualization System for Reachability-based Home Location Selection
China patent, ZL 201711195574.9, received on 2019-12-03, 1st inventor.

A Method for Extracting Meaningful Clips from Table Tennis Matches
China patent, ZL 201710643930.2, received on 2019-09-20, 1st inventor.

Patents Received (continue)

A Visual Analytics System for Spatiotemporal Football Formation Changes
China patent, ZL 201810857467.6, received on 2019-08-23, 1st inventor.

A Method for Analyzing Table Tennis Match Strategies
China patent, ZL 201710643935.5, received on 2019-04-16, 1st inventor.

Books

Big Data Visual Analytics Methods and Applications
Wei Chen, **Yingcai Wu**, Hujun Bao, et al.
Chemical Industry Press, Mar. 2019.

II. Teaching & Supervision:

Course Evaluation

- Summary: undergraduate (UG) courses taught x 16; postgraduate (PG) courses taught x 5.

Courses Taught

Teaching evaluation results over the last five years:

Year	Semester	Course	Evaluation Result	Teaching Hours	UG/PG	Class Size
2016–2017	Winter	Information Visualization	Excellent	16	UG	64
	Winter	Cross-Media Visualization	Pass	16	UG	25

	Winter	Big Data Visualization	4.8	16	PG	48
	Spring	History of Computer Science Thought	N/A	4	UG	97
2017–2018	Winter	Information Visualization	Excellent	24	UG	62
	Winter	Cross-Media Visualization	Excellent	22	UG	39
	Winter	Big Data Visualization	5.0	16	PG	28
	Spring	History of Computer Science Thought	N/A	4	UG	93
2018–2019	Winter	Information Visualization	Excellent	22	UG	36
	Winter	Cross-Media Visualization	Excellent	32	UG	42
	Winter	Big Data Visualization	4.9	16	PG	43
	Spring	History of Computer Science Thought	N/A	4	UG	145
	Summer	Practice Course I: Introduction to Visualization	N/A	33	UG	27
2019–2020	Winter	Information Visualization	Good	22	UG	59
	Winter	Cross-Media Visualization	Excellent	32	UG	28
	Winter	Big Data Visualization	5.0	32	PG	53
	Spring	History of Computer Science Thought	N/A	8	UG	162
	Summer	Practice Course I: Introduction to Visualization	N/A	33	UG	41
2020–2021	Winter	Information Visualization	Ongoing	22	UG	90
	Winter	Cross-Media Visualization	Ongoing	32	UG	64
	Winter	Big Data Visualization	5.0	16	PG	30

Student Supervision

- Graduate Advisees: Ph.D. students x 17; M.Phil students x 8.
- UG Final Year Projects: current projects x 5; completed projects x 29.
- UG Student Research Training Program (SRTP) Projects: current projects x 3; completed projects x 7.

Graduate Advisees

Current:

Di Weng (Ph.D., Fall 2016 -)
Research area: urban visual analtyics, information visualization, urban computing.

Tan Tang (Ph.D., Fall 2016 -)
Research area: information visualization, storyline visualization.

Ji Lan (Ph.D., Fall 2016 -) (co-supervise with Prof. Jonathan J.H. Zhu in City University of Hong Kong)
Research area: sports visual analytics, computational social science.

Sadia Rubab (Ph.D., Fall 2017 -)
Research area: storytelling visualization.

Jiachen Wang (Ph.D., Fall 2018 -) (co-supervise with Prof. Hui Zhang in Zhejiang University)
Research area: sports visual analytics, information visualization.

Zikun Deng (Ph.D., Fall 2018 -)
Research area: urban visual analytics, urban computing.

Dazhen Deng (Ph.D., Fall 2018 -)
Research area: sports visual analytics, computer vision, deep leaning.

Shuainan Ye (Ph.D., Fall 2018 -)
Research area: immersive analytics, sports visual analytics.

Anqi Cao (Ph.D., Fall 2019 -)
Research area: sports visual analytics, information visualization.

Junxiu Tang (Ph.D., Fall 2019 -)
Research area: storytelling visualization, visual analytics.

Jiang Wu (Ph.D., Fall 2019 -)
Research area: sports visual analytics, information visualization.

Xiwen Cai (Ph.D., Fall 2019 -)
Research area: visual analytics, natural language processing.

Yihong Wu (Ph.D., Fall 2020 -)
Research area: visual analytics, computer vision.

Xiangtong Chu (Ph.D., Fall 2020 -) (co-supervise with Prof. Hui Zhang in Zhejiang University)
Research area: sports visual analytics, computational sports.

Ran Chen (Ph.D., Fall 2020 -)
Research area: visual analytics, visualization toolkits.

Kai Xiong (Ph.D., Fall 2020 -)
Research area: visual analytics, healthcare visualization.

Lu Ying (Ph.D., Fall 2020 -)
Research area: information visualization.

HongYe Liang (M. Phil, Fall 2018 -)
Research area: information visualization.

Jiahui Chen (M. Phil, Fall 2018 -)
Research area: visualization tools and systems.

Xiaodong Ge (M. Phil, Fall 2019 -)
Research area: big data visualization platform.

Huihua Lu (M. Phil, Fall 2019 -)
Research area: big data visualization platform.

Renzhong Li (M. Phil, Fall 2020 -)
Research area: narrative visualization.

Jing Zhang (M. Phil, Fall 2020 -)
Research area: information visualization.

Yuting Liu (M. Phil, Fall 2020 -)
Research area: information visualization.

Guoming Ding (M. Phil, Fall 2020 -)
Research area: Healthcare visualization.

Graduated:
Xiao Xie (Ph.D., Fall 2015 - December 2020)
Thesis title: *A Visual Analytics Approach for Soccer Tactics*.
Xiwen Cai (M. Phil. Fall 2016 - Summer 2018) (now a Ph.D. in Yingcai Wu's group)
Thesis title: *A Visualization Model of Image Collections Based on Semantics*.
Kejian Zhao (M. Phil. Fall 2017 - Summer 2019) (now with Alibaba)
Thesis title: *Visual Analytics of Tactic-based Match Simulation in Table Tennis*.
Kaijuan Yuan (M. Phil. Fall 2018 - Fall 2020) (now with Meituan)
Thesis title: *Visualization on evolution patterns in multiple sequences of dynamic graphs*.

Final Year Projects

Current:
Moqi He (3170101799)
2020-2021 Visual Analytics for Causation Analysis.
Shuhan Liu (3170105283)
2020-2021 Narrative Visualization.
Mengye Xu (3170102467)
2020-2021 Visual Design and Perception Study for Digital Humanities.
Qingyang Xu (3170102475)
2020-2021 Visualizations for Digital Humanities.
Junjie Jin (3170101506)
2020-2021 Federated Visual Analysis for Multi-party Graphs.

Completed:
Yinzhi Yu (3130000009)
2015-2016 Heterogeneous Urban Data Visualization.
Jun Chen (3120102062)
2015-2016 Backend System Construction of Visual Reasoning from Heterogeneous Urban Data.
Yi Wang (3120101996)
2015-2016 Visual Reasoning About Interpersonal Relation Based On Heterogeneous Data Of City.
Qixiang Fang (3120101860)
2015-2016 Design of Multivariate Networks Visualization Tool based on DOSA.
Bingzhanng Dai (3120103469)
2016-2017 Visualization of Ensemble Data in Dynamic Social Networks.
Tianchen Sun (3130103354)
2016-2017 Visual Analytics of Big Network Data.
Hemin Zhu (3130000554)
2016-2017 Visual Analytics of Home Location Selection based on Reachability.
Chenyang Ji (3130103727)
2016-2017 A Multi-Stage System for Exploring Events in Social Streams.
Xinhuan Shu (3130102167)
2016-2017 Interactive Visualization of Table Tennis Data.
Yiwei Hua (3130102158)
2016-2017 Reachability calculation and Visualization.
Shuai Hao (3130104207)
2016-2017 Toward Better Modeling and Visualization of Uncertainty for Streaming Data.
Kejian Zhao (3130102200)
2016-2017 A Semantic-based Method for Visualizing Large Image Collections.
Bohan Li (3130103371)
2016-2017 Mining and Visualizing Spatio-Temporal Correlation Patterns among Multiple Urban Datasets.
Ran Chen (3140103431)
2017-2018 Towards Better Spatial Integration in Ranking Visualization.

Jiachen Wang (3140101051)
2017-2018 Interactive Visualization of Stroke Subsequences in Table Tennis.
Shuhan Wang (3140104438)
2017-2018 Visual Analytics of Impacts of Behavior Adjustments on Scoring Rates in Table Tennis.
Yifang Wang (3140102656)
2017-2018 MARVisT: Enabling General Users to Author Glyph-based Visualization in Mobile Augmented Reality.
Hongye Liang (3140101212)
2017-2018 Visual Analytics of Sport Data.
Jiang Wu (3150104579)
2018-2019 An Interactive Authoring System for Creating Dynamic Word Clouds for Expressive Storytelling.
Jiewen Lai (3150105192)
2018-2019 A method for intelligently producing data-driven product videos.
Zihan Cai (3150105317)
2018-2019 Research on information processing and editing capability of PPT chart template.
Junxiu Tang (3140103474)
2018-2019 Research on Design Methods for Augmenting Short-form Videos using Animated Data Visualizations.
Zhuohao Zhang (3150102418)
2018-2019 VR-based Urban Visual Analytics System for Location Selection.
Yuhang Wang (3160102347)
2019-2020 Ranking Visualization System based on Spatial Integration.
Renzhong Li (3160104920)
2019-2020 Storyline Visualization.
Lu Ying (3160102508)
2019-2020 Research on Narrative transitions in Data Videos.
Chengbo Zhen (3160104212)
2019-2020 Graph Visualization in Immersive Environment.
Yihong Wu (3160104371)
2019-2020 Intelligent Soccer Analytics using Deep Learning.
Mingze Ma (3160104793)
2019-2020 A Visual Analytics Approach for Analyzing and Optimizing Bus Routes.

Student Research Training Program (SRTP) Projects

Current:
2020 Visual Analytics of Heterogeneous Data (Y202004200)
Yihan Liu, Xiaoqin Liu, Canyu Cai.
2020 Data Video Generation with AE templates (2020R401118)
Liqi Cheng, Yuchen Peng, qingyun Zhao.
2020 Visual Analytics of Event Sequence Data of Table Tennis (X20200300)
Ziyang Guo, Zuobin Wang, Chuning Shi.

Completed:
2019 Visual Analytics of Sports Data (Y201927365)
Jingyi Zhou, Sijia Wang, Yuru Yang.
2018 Imersive Analytics (201810335092)
Haoran Cheng, Hongli Meng, Yueren Yang.
2018 Visual Analytics of Soccer Formation (2018R401126)
Xinli Hou, Yun Yang, Xiang Lin.
2018 Visual Analytics of Heterogeneous Urban Data (Y27311)
Chengbo Zheng, Guande Wu.
2017 Visual Analytics of Sports Data (Y27311)
Zhouxiang Zhan, Fan Zhou, Jiang Wu.
2017 Decision Making with Visual Analytics of Urban Data (Y27311)
Yi Ren, Zhanlin Sun, Yue Zha.
2017 Immersive Analytics (2017R401119)
Zhuohao Zhang, Runhao Bao, Yangfan Liang.

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