Jiachen Wang

csejiachenw@ust.hk
+86 177 6451 9325 / +852 5573 5682
www.wjc-vis.com

RESEARCH INTEREST

My research focuses on computational sports science, which uses computational techniques such as visual analytics, knowledge mining, and machine learning to address challenges in the field of sports data analysis. This includes tasks such as tactical mining, match simulation, and training optimization.

EDUCATION

Ph.D. Doctor of Philosophy in Computer Science and Technology (09/2018-06/2023)
Department of Computer Science and Technology, **Zhejiang University**, Hangzhou, China
Supervisor: Prof. Yingcai Wu
Thesis: Intelligent Data Analysis in Table Tennis

B.S. Bachelor of Engineering in Digital Media Technology (09/2014-06/2018)
Department of Computer Science and Technology, **Zhejiang University**, Hangzhou, China
Supervisor: Prof. Yingcai Wu
Thesis: iSSVis: Interactive Visualization of Stroke Sequences in Table Tennis

APPOINTMENT

2023– **Hong Kong University of Science and Technology**
Postdoctoral Fellow, Department of Computer Science and Engineering

INVOLVED PROJECTS

2022 Visual Analytics Platform for Table Tennis Data IV
Source: Chinese Table Tennis Association
Amount funded: **RMB 300,000**, duration: 1 year.

2021 Visual Analytics Platform for Table Tennis Data III
Source: Chinese Table Tennis Association
Amount funded: **RMB 300,000**, duration: 1 year.

2020 Visual Analytics Platform for Table Tennis Data II
Source: Chinese Table Tennis Association
Amount funded: **RMB 300,000**, duration: 1 year.

2019 Visual Analytics Platform for Table Tennis Data I
Source: Chinese Table Tennis Association
Amount funded: **RMB 500,000**, duration: 1 year.

2021 Data Visualization Platform for Basketball Data
Source: Chinese Basketball Association
Amount funded: **RMB 360,000**, duration: 1 year.

2023 Technology for Data Services Platform in Complex Scenarios
Source: "Jianbing" Research and Development Program of Zhejiang Province
Amount funded: **RMB 50,110,000**, duration: 3 years.

2021 Data Platform for Table Tennis in the 19th Asian Games
Source: Research Project on Agricultural and Social Development in Hangzhou
Amount funded: **RMB 200,000**, duration: 2 years.

EXPERIENCE

Chinese Table Tennis Association

2019- **Construction of the Table Tennis Data Platform.** I worked closely with coaches and players of the Chinese National Table Tennis Team to collect and iterate their requirements for the platform. Based on the requirements, I designed and developed the data collection, tactic mining, match simulation, performance evaluation, and visual training methods for table tennis.

2021 **Preparation for the Tokyo 2020 Olympics.** As a core member of our team, I provided data service for the Chinese National Table Tennis Team to help the team prepare for the Tokyo 2020 Olympics. The team won 4 gold and 3 silver medals. The collaboration was reported by CCTV[1] and other online media. The related reports have been read more than 80 million times on Sina Weibo.

2022 **Preparation for the 19th Asian Games in Hangzhou.** I led our team to provide data service for the Chinese National Table Tennis Team to prepare for the 19th Asian Games in Hangzhou.

Chinese Basketball Association

2022 **Construction of the Basketball Visualization System.** I worked closely with the Chinese Basketball Association to collect and iterate their requirements for the visualization system. Then, I designed and developed a system to visualize the data of the registered players, coaches, referees, clubs, and matches.

Quality Education Fund

2023 **Construction of AI-assisted Virtual Reality System for English Speaking.** I led the development team to design and develop VR software for immersive self-directed English speaking. The VR software combines an AI feedback system for evaluating students' vocal and non-vocal performance during English learning.

PUBLICATIONS

Google Scholar

Citation: 402

H-index: 8

Link: Click to visit google scholar[2]

Peer-reviewed Conferences and Journal Papers

2023 P1 **Jiachen Wang**, Ji Ma, Zheng Zhou, Xiao Xie, Hui Zhang, Yingcai Wu, Huamin Qu. "TacPrint: Visualizing the Biomechanical Fingerprint in Table Tennis" *To appear in IEEE Transactions on Visualization and Computer Graphics (IEEE PacificVis 2024 TVCG journal track).*

[1] https://news.cctv.com/2021/08/11/ARTIr8tJM4nALew9sT4pP9092108 11.shtml
[2] https://scholar.google.com/citations?hl=zh-CN&user=fTMCgQoAAAAJ

2023 P2 Yihong Wu, Lingyun Yu, Jie Xu, Dazhen, Deng, **Jiachen Wang**, Xiao Xie, Hui Zhang, Yingcai Wu. "AR-Enhanced Workouts: Exploring Visual Cues for At-Home Workout Videos in AR Environment" *Proceedings of the 36th Annual ACM Symposium on User Interface Software and Technology*, 121: 1–15.

2023 P3 **Jiachen Wang**, Yihong Wu, Xiaolong Zhang, Yixin Zeng, Zheng Zhou, Hui Zhang, Xiao Xie, and Yingcai Wu. "Tac-Anticipator: Visual Analytics of Anticipation Behaviors in Table Tennis Matches" *Computer Graphics Forum (EuroVis 2023)*, 42 (3), 223–234.

2023 P4 Ji Lan, Zheng Zhou, **Jiachen Wang**, Hui Zhang, Xiao Xie, and Yingcai Wu. "SimuExplorer: Visual Exploration of Game Simulation in Table Tennis" *IEEE Transactions on Visualization and Computer Graphics*, 29 (3), 1719–1732.

2023 P5 **Jiachen Wang**, Ji Ma, Kangping Hu, Zheng Zhou, Hui Zhang, Xiao Xie, and Yingcai Wu. "Tac-Trainer: A Visual Analytics System for IoT-based Racket Sports Training" *IEEE Transactions on Visualization and Computer Graphics (IEEE VIS 2022)*, 29 (1), 951–961.

2022 P6 Yifang Wang, Hongye Liang, Xinhuan Shu, **Jiachen Wang**, Ke Xu, Zikun Deng, Cameron Campbell, Bijia Chen, YIngcai Wu, and Huamin Qu. "Interactive Visual Exploration of Longitudinal Historical Career Mobility Data" *IEEE Transactions on Visualization and Computer Graphics*, 28 (10), 3441–3455.

2022 P7 **Jiachen Wang**, Xiwen Cai, Jiajie Su, Yu Liao, and Yingcai Wu. "[13] What makes a scatterplot hard to comprehend: data size and pattern salience matter" *Journal of Visualization (ChinaVis 2021)*, 25 (1), 59–75.

2021 P8 **Jiachen Wang**, Dazhen Deng, Xiao Xie, Xinhuan Shu, Yu-Xuan Huang, Le-Wen Cai, Hui Zhang, Min-Ling Zhang, Zhi-Hua Zhou, and Yingcai Wu "Tac-Valuer: Knowledge-based Stroke Evaluation in Table Tennis" *Proceedings of the 27th ACM SIGKDD Conference on Knowledge Discovery & Data Mining*, 3688–3696.

2021 P9 Dazhen Deng, Jiang Wu, **Jiachen Wang**, Yihong Wu, Xiao Xie, Zheng Zhou, Hui Zhang, Xiaolong Zhang, and Yingcai Wu. "EventAnchor: Reducing Human Interactions in Event Annotation of Racket Sports Videos" *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, 1-13.

2021 P10 **Jiachen Wang**, Jiang Wu, Anqi Cao, Zheng Zhou, Hui Zhang, and Yingcai Wu. "Tac-Miner: Visual Tactic Mining for Multiple Table Tennis Matches" *IEEE Transactions on Visualization and Computer Graphics (IEEE PacificVis 2021)*, 27 (6), 2770–2782.

2021 P11 Xiao Xie, **Jiachen Wang**, Hongye Liang, Dazhen Deng, Shoubin Cheng, Hui Zhang, Wei Chen, and Yingcai Wu. "PassVizor: Toward Better Understanding of the Dynamics of Soccer Passes" *IEEE Transactions on Visualization and Computer Graphics (IEEE VIS 2020)*, 27 (2), 1322–1331.

2020 P12 **Jiachen Wang**, Kejian Zhao, Dazhen Deng, Anqi Cao, Xiao Xie, Zheng Zhou, Hui Zhang, and Yingcai Wu. "Tac-Simur: Tactic-based Simulative Visual Analytics of Table Tennis" *IEEE Transactions on Visualization and Computer Graphics (IEEE VIS 2019)*, 26 (1), 407–417.

2019 P13 Yingcai Wu, Xiao Xie, **Jiachen Wang**, Dazhen Deng, Hongye Liang, Hui Zhang, Shoubin Cheng, and Wei Chen. "ForVizor: Visualizing Spatio-Temporal Team Formations in Soccer" *IEEE Transactions on Visualization and Computer Graphics (IEEE VIS 2018)*, 25 (1), 65–75.

2018 P14 Yingcai Wu, Ji Lan, Xinhuan Shu, Chengyang Ji, Kejian Zhao, **Jiachen Wang**, and Hui Zhang. "iTTVivs: Interactive Visualization of Table Tennis Data" *IEEE Transactions on Visualization and Computer Graphics (IEEE VIS 2017)*, 24 (1), 709–718.

INVITED TALKS

2023 "Intelligent Data Analysis in Table Tennis." ChinaVis 2023, Chongqing, Jun 24.

2022 "How to conduct research?" Special topic seminar, Zhejiang University, Nov 20.

2022 "My research journey." , Opening ceremony for graduate students in the School of Computer Science,

Zhejiang University, Sep 17.

2021 "Intelligent tactic mining in table tennis" Ph.D. Student Innovation Forum, Zhejiang University, Nov 6.

AWARDS AND HONORS

2023 **Motivation Program for Doctoral Dissertations of the Chinese Society of Image and Graphics**

2023 Silver awards of the 9th Zhejiang College Students "Internet Plus" Innovation and Entrepreneurship Competition

2023 The 2nd prize in the Humanities and Social Sciences Award for outstanding achievement of Zhejiang University

2022 Longfor scholarship

2022 Silver awards of the 8th Zhejiang College Students "Internet Plus" Innovation and Entrepreneurship Competition

2022 The 1st prize in the Humanities and Social Sciences Award for outstanding achievement of Zhejiang University

2021 **National Scholarship**

2021 Award of Honor for Graduate of Zhejiang University

2021 Graduate of Merit of Zhejiang University

2021 IEEE PacificVis 2021 Honorable Mention Award

2019 **National Scholarship**

2019 Award of Honor for Graduate of Zhejiang University

2019 Graduate of Merit of Zhejiang University

2018 Academic Scholarship of Zhejiang University

2017 Academic Star of the Department of Computer Science and Technology

2016 Outstanding Student Leader of Zhejiang University

2015 Second-Class Scholarship for Outstanding Students of Zhejiang University

SERVICE

Conference Reviewer

2024 EuroVis

2024 ACM SIGCHI

2023 IACSS

2023 IEEE VIS

2022 IEEE VIS

2021 IEEE VIS

2021 EuroVis

2020 IEEE VIS

2020 ACM SIGCHI

Journal Reviewer

2023 IEEE Transactions on Visualization and Computer Graphics

2023 Expert Systems with Applications

2023 Internet of Things Journal

2023 Journal of Big Data

2023 Journal of Visualization

Teaching Assistant

2020 History of Computer Thoughts, Zhejiang University

2019 Information Visualization, Zhejiang University

2019 Cross Media Data Visualization, Zhejiang University

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