Yao (Marc) Wang

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Research Interest

I am a PhD student under the supervision of Prof. Andreas Bulling, and I am working on visual attention modelling for optimization of information visualizations, which integrated to Project A07 in SFB-TRR 161 `https://www.sfbtrr161.de/research/project_a07/`. My first research goal is acquiring large-scale humanlike attention data without eye tracking equipment on information visualizations. I turn to crowdsourcing approaches (webcam or mouse-clicking) or gaze data synthesis by generative or cognitive models. My second research goal is to computationally model human visual behaviour (saliency map, scanpath) under different tasks (top-down) in information visualizations. My third research goal is to develop a task-driven computational model to optimize information visualisation by maximising metrics (e.g. recallability, gaze uncertainty).

Education

University of Stuttgart, Stuttgart, Germany *Sept. 2020 – Now*

Ph.D. student at Institute for Visualisation and Interactive System (VIS)

Aalto University, Espoo, Finland *Jan. – Apr. 2023*

Visiting Ph.D. at Department of Communications and Networking

Peking University, Beijing, China *2020*

M.Sc. in Computer Software and Technology, GPA **3.50 / 4.0**

Peking University, Beijing, China *2017*

B.Sc. in Intelligence Science and Technology, GPA **3.34 / 4.0** (Ranking **8 / 35**)

Highlighted Publications

- **Y. Wang**, C. Jiao, M. Bâce, A. Bulling, "VisRecall: Quantifying Information Visualisation Recallability via Question Answering", *IEEE Transactions on Visualization and Computer Graphics, vol. 28, no. 12, pp. 4995-5005, 1 Dec. 2022*.
- **Y. Wang**, M. Bâce, A. Bulling, "Scanpath Prediction on Information Visualisations", *IEEE Transactions on Visualization and Computer Graphics, pp. 1-13, 2023*.
- **Y. Wang**, M. Koch, M. Bâce, D. Weiskopf, A. Bulling, "Impact of Gaze Uncertainty on AOIs in Information Visualisations", in *2022 Symposium on Eye Tracking Research and Applications, No. 60, pp. 1–6*.

Teaching

Teaching Assistant

Digital Image Processing (Chinese), Peking University	*2019*
Machine Learning and Computer Vision for HCI (Fachpraktikum), University of Stuttgart	*2020, 2021*
Mensch-Computer-Interaktion (English, German), University of Stuttgart	*2021, 2022*
Machine Perception and Learning (English), University of Stuttgart	*2022, 2023*

Student Thesis

Joint Learning Model for Saliency and Scanpath Prediction	*2021*
Multi-view 3D Saliency	*2021*
Predicting Recallability from Gaze Behaviour on InfoVis	*2022*
Visual Question Answering through Attention Modelling with Curiosity-driven Reinforcement Learning	*2022*
Large-scale Information Visualization Saliency Dataset Collection	*2023*
GPT-4-based Visualization Reasoning Dataset	*2023*

Services

Reviewing

- CHI 2023, 2024
- Journal of Vision
- ISMAR 2023
- ETRA 2021, 2022, 2023, 2024
- PETMEI 2023 – ETRA Workshop
- ETVIS 2022, 2023 – ETRA Workshop
- Gaze 2022 – CVPR Workshop

Organizing

- PETMEI 2023 – ETRA Workshop
- ETRA 2024 – Workshop Chair

Volunteering

- CHI 2023 – Student Volunteer
- ETRA 2021, 2022 – Student Volunteer

Awards & Honors

- Merit Student *2015, 2018*
- Merit Student Pacesetter *2016*
- Schlumberger Scholarship ($1,600) *2018*
- Graduate Scholarship ($3,300) *2017*
- **2**nd **prize** in 3D Reconstruction Challenge Group, China Virtual Reality and Visualization Industry Technology Innovation Strategic Alliance *Nov. 2019*

Skills

- Programming Languages: Python, MATLAB, C++, JavaScript
- Languages: Mandarin (native), English (C1), German (B1)
- Other skills: Drum, Billiard