

YAO (MARC) WANG

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With my expertise in eye tracking, human-computer interaction, computer vision, and deep learning, I aim to bridge the gap between human cognitive processes and intelligent systems, including understanding how users perceive and process information under various conditions, and to develop computational models of human visual attention. The ultimate goal is to create adaptive, human-centred interfaces that optimise user performance and facilitate seamless Human-AI collaboration.

📁 CURRENT POSITION

University of Stuttgart, Stuttgart, Germany

Nov. 2024 – Now

Postdoc at the Institute for Visualisation and Interactive Systems (VIS).

🎓 EDUCATION

University of Stuttgart, Stuttgart, Germany

Sept. 2020 – Nov. 2024

Ph.D. thesis: [Analysis and modelling of visual attention on information visualisations](#)

🏆 **Summa cum laude**. Supervisor: Prof. Andreas Bulling

Aalto University, Espoo, Finland

Jan. – Apr. 2023

Visiting Ph.D. at the Department of Communications and Networking. Supervisor: Prof. Antti Oulasvirta

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**

📄 PUBLICATIONS (J: JOURNAL, C: CONFERENCE, W: WORKSHOP, P: PREPRINT, §: EQUAL CONTRIBUTION)

- [J₁] C. Jiao, **Y. Wang**, G. Zhang, M. Bâce, Z. Hu, A. Bulling, [DiffGaze: A Diffusion Model for Modelling Fine-grained Human Gaze Behaviour on 360° Images](#), *ACM Transactions on Interactive Intelligent Systems (TiiS)*, 16 (1), 2026.
- [J₂] Z. Wu, **Y. Wang**, M. Langer, AM. Feit, [ReLEYEance: Gaze-based Assessment of Users' AI-reliance at Run-time](#), *Proceedings of ACM on Human-Computer Interaction (PACM HCI)*, 9 (3), 2025.
- [J₃] **Y. Wang**, Y. Jiang, Z. Hu, C. Ruhdorfer, M. Bâce, A. Bulling, [VisRecall++: Analysing and Predicting Recallability of Information Visualisations from Gaze Behaviour](#), *Proceedings of ACM on Human-Computer Interaction (PACM HCI)*, 8 (ETRA), 2024.
- [J₄] **Y. Wang**, M. Bâce, A. Bulling, [Scanpath Prediction on Information Visualisations](#), *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, 30 (7), 2023.
- [J₅] **Y. Wang**, C. Jiao, M. Bâce, A. Bulling, [VisRecall: Quantifying Information Visualisation Recallability via Question Answering](#), *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, 28 (12), 2022.
- [J₆] Z. Wei§, **Y. Wang**§, H. Yi, Y. Chen, G. Wang, [Semantic 3D Reconstruction with Learning MVS and 2D Segmentation of Aerial Images](#), *Applied Science*, 10 (4), 2020.
- [C₁] L. Zhang§, **Y. Wang**§, Y. Zhang, W. Kerle-Malcharek, K. Klein, F. Schreiber, A. Bulling, [Towards a Better Understanding of Graph Perception in Immersive Environments](#), *Proc. 33rd International Symposium on Graph Drawing and Network Visualization (GD 2025)*.
- [C₂] M. Chang, **Y. Wang**, HW. Wang, Y. Zhou, A. Bulling, CX. Bearfield, [Tell Me Without Telling Me: Two-Way Prediction of Visualization Literacy and Visual Attention](#), *Proc. 2025 IEEE Visualization and Visual Analytics (VIS 2025)*.
- [C₃] M. Chang, **Y. Wang**, HW. Wang, A. Bulling, CX. Bearfield, [Grid Labeling: Crowdsourcing Task-Specific Importance from Visualizations](#), *Proc. 27th Eurographics Conference on Visualization (EuroVIS 2025 Short Paper)*.
- [C₄] D. Shi, **Y. Wang**, Y. Bai, A. Bulling, A. Oulasvirta, [Chartist: Task-driven Eye Movement Control for Chart Reading](#), *Proc. ACM SIGCHI Conference on Human Factors in Computing Systems (CHI 2025)*.
- [C₅] M. Sönnichsen, M. Elfares, **Y. Wang**, R. Küsters, A. Roitberg, A. Bulling, [AttentionLeak: What Does Human Attention Reveal About Information Visualisation?](#), *Proc. International Conference on Document Analysis and Recognition (ICDAR 2025)*.
- [C₆] **Y. Wang**, W. Wang, A. Abdelhafez, M. Elfares, Z. Hu, M. Bâce, A. Bulling, [SalChartQA: Question-driven Saliency on Information Visualisations](#), *Proc. ACM SIGCHI Conference on Human Factors in Computing Systems (CHI 2024)*.

- [C₇] **Y. Wang**§, Q. Dai§, M. Bâce, K. Klein, A. Bulling, [Saliency3D: a 3D Saliency Dataset Collected on Screen](#), *Proc. 2024 Symposium on Eye Tracking Research and Applications (ETRA Short Paper)*.
- [C₈] E. Sood, L. Shi, M. Bortoletto, **Y. Wang**, P. Müller, A. Bulling, [Improving Neural Saliency Prediction with a Cognitive Model of Human Visual Attention](#), *Proc. 45th Annual Meeting of the Cognitive Science Society (CogSci 2023)*.
- [C₉] Y. Chen§, **Y. Wang**§, P. Lu, Y. Chen, G. Wang, [Large-scale Structure from Motion with Semantic Constraints of Aerial Images](#), *Proc. 1st Chinese Conference on Pattern Recognition and Computer Vision (PRCV 2018)*.
- [C₁₀] T. Hu, **Y. Wang**, Y. Chen, P. Lu, H. Wang, G. Wang, [Sobel Heuristic Kernel for Aerial Semantic Segmentation](#), *Proc. 25th IEEE International Conference on Image Processing (ICIP 2018)*.
- [W₁] **Y. Wang**, J. Nagasawa, Y. Jiang, D. Shi, C. Jiao, A. Bulling, [Is this it? Benchmarking Scanpath Metrics for Information Display](#), in *Proc. 2026 Symposium on Eye Tracking Research and Applications (METR Workshop)*.
- [W₂] T. Nishiyasu, T. Kistorz, **Y. Wang**, Y. Sato, A. Bulling, [ChartQC: Question Classification from Human Attention Data on Charts](#), in *Proc. 2025 Symposium on Eye Tracking Research and Applications (ETVIS Workshop)*.
- [W₃] **Y. Wang**§, M. Koch§, M. Bâce, D. Weiskopf, A. Bulling, [Impact of Gaze Uncertainty on AOIs in Information Visualisations](#), in *Proc. 2022 Symposium on Eye Tracking Research and Applications (ETVIS Workshop)*.
- [P₁] **Y. Wang**, D. Shi, J. Pan, Z. Hu, A. Oulasvirta, A. Bulling, [ChartOptimiser: Task-driven Optimisation of Chart Configurations](#), *ACM Transactions on Interactive Intelligent Systems (TiIS)*, 2025, *Accepted with major revision*.
- [P₂] **Y. Wang**§, L. Zhang§, Y. Zhang, W. Kerle-Malcharek, K. Klein, F. Schreiber, A. Bulling, [Understanding and Enhancing Stereoscopic 3D Graph Perception with Eye Tracking](#), *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, 2025, *invited by GD 25' PC, under review*.

TEACHING

| | |
|---|----------------------------|
| Machine Perception and Learning, University of Stuttgart | 2024, <i>lecturer@2025</i> |
| Human-Computer Interaction, University of Stuttgart | 2021, 2022 |
| Practical Course for: Machine Learning and Computer Vision for HCI, University of Stuttgart | 2020, 2021 |
| Digital Image Processing (Chinese), Peking University | 2019 |

ACADEMIC SERVICES

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| Short Paper Chair | <i>ETRA 2026</i> |
| Workshop (and Tutorial) Chair | <i>ETRA 2024, 2025</i> |
| Program Committee | <i>VINCI 2025, EuroVIS 2026, IUI 2025, 2026</i> |
| Workshop Organiser | <i>PETMEI@ETRA 2023, ETVIS@ETRA 2025</i> |
| Student Volunteer | <i>ETRA 2021, CHI 2023</i> |

Reviewing

CHI, IUI, TIIS, Journal of Vision, ETRA, VIS, EuroVIS, ISMAR, Mensch und Computer, VINCI, Gaze Workshop@CVPR

AWARDS & HONORS

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- **2nd prize** in 3D Reconstruction Challenge Group, China IVRA *Nov. 2019*
 - Schlumberger Scholarship (~\$1,600) *2018*
 - Graduate Scholarship (~\$3,300) *2017*
 - Merit Student Pacesetter *2016*
 - Merit Student *2015, 2018*

SKILLS

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- Languages: Mandarin (native), English (full professional proficiency), German (B1/B2)
 - Programming Languages: Python, JavaScript, C++, MATLAB

REFERENCES

Prof. Dr. Andreas Bulling – Full Professor, University of Stuttgart, Germany
Prof. Dr. Mihai Bâce – Tenure Track Assistant Professor, KU Leuven, Belgium
Prof. Dr. Yue Jiang – Assistant Professor, University of Utah, USA