

Yiyan Wang

wangyiyan@seu.edu.cn | [george-wyy.github.io](https://github.com/george-wyy)

PhD student in Mechanical Engineering at Southeast University, supervised by Prof. Yafeng Niu. My research examines gaze interaction, target selection, and user experience in AR/VR.

Education

Southeast University | PhD in Mechanical Engineering (in progress)

Sep 2024 - Present

Southeast University | MS in Design Science

Sep 2021 - Jun 2024

China Agricultural University | BS in Industrial Design

Aug 2017 - Jun 2021

GPA 3.9/4.0, ranked 1/36; additional degree in Data Science and Big Data Technology.

Research Experience

Gaze interaction research | 2021 - Present

Design and evaluate gaze, blink, smooth-pursuit, and multimodal interaction methods; build experimental systems with HoloLens 2, Unity, and eye trackers.

Visual-haptic interaction in gaze-controlled systems | 2023 - 2025; completed Jun 2026

Technical lead on a Ministry of Education Joint Fund project, responsible for technical planning, experimental design, and system implementation.

Head-mounted eye-tracking system | 2025 - Present

Lead hardware and algorithm development for infrared pupil detection, gaze calibration, and data collection and analysis tools.

Selected Projects

Mic Pro Mac | 2026

An unofficial macOS companion for Insta360 Mic Pro, with battery status, e-ink wallpapers, and recording export.

VR lunar-base mission simulation | 2022 - 2023

Technical lead; developed maintenance and lunar-sampling scenarios and guided the team in VR interaction development.

Gaze-based attention-training games | 2020 - 2021

Undergraduate thesis; designed gaze and smooth-pursuit games and conducted usability testing at a children's rehabilitation center.

Skills and Honors

Eye tracking and XR: Tobii, Pupil Labs, HoloLens 2, Unity, MRTK3

Programming and analysis: Python (PyTorch, OpenCV), C#, R; experimental design, statistical analysis, usability evaluation

Outstanding Master's Thesis, Southeast University (2025)

National Scholarship (2019, 2020)

Book Contribution

Contributed Chapter 1 and technical editing to Eye-Control Interaction Paradigm Design, by Yafeng Niu (Science Press, 2025). ISBN 978-7-03-083699-1.

Selected Publications

Full list of papers and patents: george-wyy.github.io/publications/

Accepted / In Press

Qiang Xiao, Yi Yan Wang, Qian Ma, Yu Ming Ning, Lin Han Fan, Shan Wen Luo, Long Chen, Da Yu Cai, Jing Cheng Zhang, Wei Chi Huang, Zhu Tao Wang, Jian Wei You, Ya Feng Niu, Tie Jun Cui, Din Ping Tsai.

Gaze-Driven Topological Phase-Transition Metasurfaces

Opto-Electronic Advances, 2026. Co-first author (second of three equal contributors)

Accepted 2026-10; in press.

Yiyan Wang, Weichi Huang, Linhan Fan, Zhutao Wang, Yafeng Niu.

SPMark: Improving Small-Target Text Selection with Smooth-Pursuit Gaze Interaction in Hybrid Paper-Digital Environments

Virtual Reality (Springer), 2026. First author

Accepted 2026-09; in press.

Selected Published Papers

Jingze Tian, Yiyan Wang, Jinchun Wu, Can Liu, Yafeng Niu.

Exploring coordination in Gaze-Hand cascaded Interaction: Designing robust solutions for Low-Precision eye tracking

Advanced Engineering Informatics, 2026. Second author

[doi:10.1016/j.aei.2026.104766](https://doi.org/10.1016/j.aei.2026.104766)

Wei-Chi Huang, Zhuo-Heng Song, Yi-Yan Wang, Lin-Han Fan, Ya-Feng Niu.

Take-A-Look: Enabling intuitive distant target interactions in industrial virtual reality applications via natural gestures

Computers in Industry, 2026. Third author

[doi:10.1016/j.compind.2026.104545](https://doi.org/10.1016/j.compind.2026.104545)

牛亚峰, 王以俨, 黄炜驰, 范林涵.

基于设计工效学的眼控交互范式设计研究现状与进展

包装工程, 2025. Second and corresponding author

Wei-Chi Huang, Yi-Yan Wang, Lin-Han Fan, Sha-Tong Yang, Ya-Feng Niu.

Enhancing gaze interaction performance: Design and optimization of perspective-driven fisheye view

Advanced Engineering Informatics, 2025. Second author

[doi:10.1016/j.aei.2025.103365](https://doi.org/10.1016/j.aei.2025.103365)

Yi-Yan Wang, Jing-Ze Tian, Lang Xiao, Jia-Xin He, Ya-Feng Niu.

Research on a spatial-temporal characterisation of blink-triggered eye control interactions

Advanced Engineering Informatics, 2024. First author

[doi:10.1016/j.aei.2023.102297](https://doi.org/10.1016/j.aei.2023.102297)

Yi-yan Wang, Wen Cheng, Jing-ze Tian, Wei-chi Huang, Ya-feng Niu, Wen-jun Yang, Cheng-qi Xue.

Design recommendations of target size and tracking speed under circular and square trajectories for smooth pursuit with Euclidean algorithm in eye-control system

Displays, 2024. First author

[doi:10.1016/j.displa.2023.102608](https://doi.org/10.1016/j.displa.2023.102608)

Under Review / Submitted (First Author)

Gaze2Foot

ACM Transactions on Computer-Human Interaction. Under review.

Gaze Localizes, the Head Confirms

International Journal of Human-Computer Interaction. Under review.

DragCal

International Journal of Human-Computer Interaction (Taylor & Francis). Submitted (Oct 2026).