

# Zhecheng Yu

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## Experiences

- **Visiting Scholar** – *National University of Singapore, Singapore* Aug 2025 – Apr 2026 (expected)
- **BEng** – *Southeast University, Nanjing, China* Aug 2022 – Jun 2026 (expected)  
Training Base for Top Students in Computer Science (top 20 CS undergraduates) Avg. Score: 89.29

## Research Interests

Computer Vision, Multimodal AI, Explainable AI

## Publications

- [1] **Learning from Human Gaze: Human-like Robot Social Navigation in Dense Crowds** AAAI 2026  
Zhecheng Yu, Yan Lyu, Chen Yang, Tao Chen, Yishuang Zhang, Bo Ling, Peng Wang, Guanyu Gao, Weiwei Wu, Brian Y. Lim

## Projects

**Imaginative XAI**

**Supervisor:** Prof. Brian Y. Lim, National University of Singapore Aug 2025 – present

- Impute hard-to-acquire modalities via generation techniques to improve downstream decision-making performance.
- Synthesize intuitive non-verbal rationalizations (e.g., visual simulation) to lower the cognitive load of interpretation.
- Generate diverse counterfactuals to challenge user prior belief and reduce confirmation bias in human reasoning.

**Gaze-Augmented AI**

**Supervisor:** Prof. Yan Lyu, Southeast University Jun 2024 – present

- **Comprehensive Egocentric Gaze-Motion Dataset for Crowd Navigation Analysis** Nov 2025 – present
  - Develop a gaze-semantic system integrating gaze data with SOTA CV models to bridge the gap from pixels to semantics.
  - Integrate IMU data to capture head orientation and rotational dynamics, enabling a holistic analysis of visual exploration.
  - Conduct a comprehensive behavioral analysis across diverse demographics, navigational intents, and crowd densities.
- **From Gaze to Human-like Robot Crowd Navigation** Nov 2024 – Jul 2025
  - Collected an egocentric dataset featuring synchronized human gaze, video, and trajectory data in real-world crowds.
  - Developed a modular framework that predicts human-like gaze to identify socially saliency and guide navigation.
  - Demonstrated that incorporating human gaze improves both navigation performance and human alignment.
- **VR-Based Gaze Projection onto RGB-D Videos** Jun 2024 – Nov 2024
  - Developed eye tracking and gaze interaction functionalities in a virtual environment with a MR headset and Unity.
  - Integrate the MR headset with a depth camera into a multimodal data collection tool for real-world eye tracking.
  - Matched gaze vectors to 3D pixels by maximizing directional similarity, mapping 2D gaze points onto the RGB video.

## Extracurricular Experiences

**Head of the Organizational Department** The CSE Students' Union, Southeast University Sep 2023 – Jun 2024

- Planned, organized and hosted large-scale campus events
- Demonstrated strong leadership and teamwork skills

## Awards

- **Excellent Research-based Final Year Project (FYP)** (top 24 undergraduates university-wide) Dec 2025
- **China-Singapore SIP International Scholarship** 10,000 CNY (1/304) Oct 2025
- **National Grand Prize** 2024 National English Competition for College Students (top 1‰) May 2024