

# Hanlei Shi

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No. 1, Xiangshan Zhinong, Xihu District, Hangzhou, Zhejiang, China

## EDUCATION

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|-------------------|-------------------------------------------------------------------------------------------------------------------------|--------------|
| 2026.09 - Present | University of Chinese Academy of Sciences<br>Ph.D. Candidate, Computer Science and Technology (Artificial Intelligence) |              |
| 2023.09 - 2026.06 | University of Chinese Academy of Sciences<br>M.Sc. in Artificial Intelligence                                           | GPA: 3.8/4.0 |
| 2017.09 - 2021.06 | Xidian University<br>B.Eng. in Information Countermeasure Technology                                                    | GPA: 3.6/4.0 |

## WORK EXPERIENCE

Beijing Hongdong Technology Co., Ltd. Jul. 2021 – Sep. 2023  
Software Test Engineer

- Performed embedded software testing, automation scripting, and code analysis for reliability validation in engineering systems.

## PROJECTS

Multimodal Empathetic Dialogue System for Social-AI Interaction 2024 – Present

- Developed **talking-head generation algorithms** using **Chain-of-Thought** and **multi-stage diffusion denoising** for high-fidelity lip-synced video synthesis.
- Proposed a **semantics-driven paralinguistic motion modeling framework**, enabling fine-grained facial motion generation guided by speaker intent.
- Engineered a **real-time avatar interaction system** with WebGL optimization, achieving <50 ms latency.
- Led cross-modal alignment and **conversation-level emotion modeling**, introducing local-global fusion and emotion hotspot localization for ERC.
- Outcomes include:
  - Expressive talking-head generation: submissions to *Pattern Recognition* and *Neurocomputing*, and granted patents.
  - Multimodal emotion recognition: submission to *IEEE Transactions on Affective Computing* and granted patents.
  - Emotion recognition in conversation: international conference paper under review.

Zhejiang Vanguard Project: Digital Therapeutics for Depression Detection 2024 – Present

- Developed a visual biomarker extraction system for depression detection in low-resource settings by integrating vision models with LLM-augmented questionnaire data for enhanced visual-text synergy.
- Led multimodal fusion research and proposed the **HOPE hierarchical framework**, extending cross-modal alignment methods for more robust visual-language integration.
- Achieved **1st Place (94.51% accuracy)** in the [ACM MM 2025 Multimodal Personality-aware Depression Detection Grand Challenge \(Young Adult Track\)](#), outperforming the runner-up by 1.4% and the baseline by 49.14%; served as lead author of the accepted ACM MM 2025 Grand Challenge Track paper.

## PUBLICATIONS

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\* Co-first author, † Advisor

1. **Hanlei Shi**, et al. *Think-Before-Draw: Decomposing Emotion Semantics & Fine-Grained Controllable Expressive Talking Head Generation*. Pattern Recognition, Accepted, 2026. [Paper Link](#) [Github Link](#)
2. **Hanlei Shi\***, et al. *HOPE: Hierarchical Fusion for Optimized and Personality-Aware Estimation of Depression*. In Proceedings of the 33rd ACM International Conference on Multimedia (ACM MM '25) — Grand Challenge Track. DOI: 10.1145/3746027.3762063. [Paper Link](#), [Github Link](#)
3. Xiaodong Xiang, **Hanlei Shi**†. *When words move: Inferring semantic intent to animate expressive talking heads*. Neurocomputing, Accepted, 2026. [Paper Link](#)
4. Yu Liu, Leyuan Qu†, **Hanlei Shi**, et al. *From Coarse to Nuanced: Cross-Modal Alignment of Fine-Grained Linguistic Cues and Visual Salient Regions for Dynamic Emotion Recognition*. IEEE TAFFC, Accepted, 2026. [Paper Link](#)
5. Haoxun Li, Yuqing Sun, **Hanlei Shi**, et al. *MSF-SER: Enriching Acoustic Modeling with Multi-Granularity Semantics for Speech Emotion Recognition*. Accepted by ICASSP 2026. [Paper Link](#)
6. Yu Liu\*, **Hanlei Shi\***, et al. *Centering Emotion Hotspots: Multimodal Local-Global Fusion and Cross-Modal Alignment for Emotion Recognition in Conversations*. Under Review, 2026. [arXiv Link](#)
7. Taihao Li†, Leyuan Qu†, **Hanlei Shi**, et al. *Facial Component-Based Expression Editing Method, Electronic Device, and Readable Storage Medium*. Chinese Patent CN119152082B.
8. Taihao Li†, Leyuan Qu†, Yu Liu, **Hanlei Shi**, et al. *A Dynamic Expression Recognition Method, Electronic Device, and Computer-Readable Storage Medium*. Chinese Patent CN119206837B.
9. Taihao Li†, Leyuan Qu†, Haoxun Li, Jiayi Hu, **Hanlei Shi**. *A Method for Emotional Speech Synthesis with Controllable Fine-Grained Emphasis*. Chinese Patent CN 119207366B.

## SKILLS

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**Core Research Skills:** Multimodal affective computing, generative modeling (diffusion models, GAN), multimodal alignment (CLIP, Video-LLaVA), LLM/VLM fine-tuning (LoRA, adapter tuning), Chain-of-Thought reasoning, prompt engineering.

**Programming & Frameworks:** Python, PyTorch, HuggingFace Transformers, C, matlab.

**Engineering & Deployment:** Real-time avatar systems, API integration, scalable inference.

## HONORS & AWARDS

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**UCAS Outstanding Graduate**, Hangzhou Institute for Advanced Study, UCAS, 2026

**Graduate National Scholarship**, Hangzhou Institute for Advanced Study, UCAS, 2025

**Merit Student**, Hangzhou Institute for Advanced Study, UCAS, 2025

**First-Class Scholarship**, Hangzhou Institute for Advanced Study, UCAS, 2024 – 2025

**Second-Class Scholarship**, Hangzhou Institute for Advanced Study, UCAS, 2023 – 2024

**Second-Class Scholarship**, Xidian University, 2020–2021

**Second Prize**, Shaanxi Division, National Undergraduate Mathematical Modeling Competition, 2019

**First Prize**, CAMCA International Mathematical Modeling Competition, 2018