

# ZACHARY WENZHE HU

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## EDUCATION

- Singapore Management University** Jan 2024 - Nov 2024  
Ph.D. in Computer Science (Withdrawn) Singapore
  - Area: Human-Machine Collaborative Systems
- University of Electronic Science and Technology of China** Sep 2020 - Jun 2023  
Master of Science in Information and Communication Engineering Chengdu, China
  - GPA: 4.0/4.0; Thesis: *Image Captioning Theories and Methods*.
- University of Electronic Science and Technology of China** Sep 2016 - Jun 2020  
Bachelor in Electronic Information Engineering Chengdu, China
  - GPA: 3.93/4.0, Ranking: 15/267 (Top 5%)

## PUBLICATIONS

- Kexue Fu\*, Yawen Zhang\*, Hiu Man Ho, **Wenzhe Hu**, RAY LC, Qinyuan Lei, Shengdong Zhao. **Crafting Memorable Science Stories: Harnessing the Power of Narrative Peaks in Online Science Videos**. *Under review of ACM Transactions on Computer-Human Interaction (TOCHI)*.
- Wenzhe Hu**, Lanxiao Wang, Linfeng Xu. **Spatial-Semantic Attention for Grounded Image Captioning**. *IEEE International Conference on Image Processing (ICIP)*, 2022.
- Lanxiao Wang, Hongliang Li, **Wenzhe Hu**, Xiaoliang Zhang, Heqian Qiu, Fanman Meng, Qingbo Wu. **What Happens in Crowd Scenes: A New Dataset About Crowd Scenes for Image Captioning**. *IEEE Transactions on Multimedia*, 2023.
- Lanxiao Wang, **Wenzhe Hu**, Heqian Qiu, Chao Shang, Taijin Zhao, Benliu Qiu, King Ng Ngan, Hongliang Li. **A Survey of Vision and Language Related Multi-Modal Task**. *CAAI Artificial Intelligence Research* 1, No. 2, 2022.

## PROJECTS

- Gaze-Aided Low Vision Assistance** Jan 2024 - Nov 2024  
Role: Project leader
  - Aimed at designing a low-vision assistive system, which can assist the user's gaze movements. Afterward, it changed to implement a visual impairment early detection system.
  - Conducted 3 pilot studies and 1 formal data collection study; Implemented a web-based interface for experiments; Arranged a schedule and collected eye movement data from 40 participants.
  - Extracted over 20 eye movement features; Utilized many statistical analytic methods, e.g. ANOVA, to analyze eye movement data; Designed some machine learning and deep learning-based models to classify gaze features with an accuracy of 74%.
- Image Captioning Theories and Methods** 2023  
Master's Thesis
  - Proposed three new models for three subtasks in the field of image captioning, including image captioning, grounded image captioning, and crowd-scene captioning. Improved the performances.
  - The thesis received five 'A's in the review.
- Hierarchical Text Detection and Recognition** Jan 2023 - Jun 2023  
Role: Research assistant, Group leader
  - Participated in an OCR competition - Hierarchical Text: Challenge on Unified OCR and Layout Analysis. Developed an end-to-end text spotting model to accomplish the challenge. Achieved the 2nd place in that competition.

## SKILLS

- Languages:** Chinese, English
- Programming:** Python(PyTorch); C#(Unity); HTML/CSS/JavaScript; Java; Matlab
- Research Skills:** Experiment Design, Quantitative analysis

## HONORS AND AWARDS

- Outstanding Student Scholarship (six times)** 2017-2022
- Outstanding Graduate of UESTC (Top 10%)** 2020