

# Shengyu Hao

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## EDUCATION

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- **Zhejiang University** Hangzhou, China  
Ph.D. in Software Engineering  
Sept. 2021 - Present  
Advisor: Prof. Gaoang Wang
  - **Beijing University of Posts and Telecommunications** Beijing, China  
M.Sc. in Control Science and Engineering  
Sept. 2017 - Jun. 2020  
Advisor: Prof. Yanzhu Hu
  - **Shenyang Ligong University** Shenyang, China  
B.Sc. in Automation  
Sept. 2013 - Jul. 2017

## PUBLICATIONS

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- **Hao, S.**, Liu, P., Zhan, Y., Jin, K., Liu, Z., Song, M., Hwang, J., Wang, G. DIVOTrack: A novel dataset and baseline method for cross-view multi-object tracking in diverse open scenes. *International Journal of Computer Vision*, 2024.
  - **Hao, S.**, Zhao, Z., Chai, W., Wang, G., et al. Ego3DT: Tracking All 3D Objects in Ego-Centric Video of Daily Activities. *ACM Multimedia*, 2024.
  - Zhao, Z., Chai, W., Wang, X., Li, B., **Hao, S.**, Hwang, J., Wang, G., et al. See and think: Embodied agent in virtual environment. *European Conference on Computer Vision*, 2024.
  - Cao, S., Chai, W., **Hao, S.**, Wang, G., et al. Diffashion: Reference-based fashion design with structure-aware transfer by diffusion models. *IEEE Transactions on Multimedia*, 2023.
  - **Hao, S.**, Wang, G., Gu, R. Weakly supervised instance segmentation using multi-prior fusion. *Computer Vision and Image Understanding*, 2021.

## RESEARCH EXPERIENCE

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- **Understanding Dynamic 3D World in Ego-Centric Videos** Jan. 2024 - Present  
Construct a 3D environment from ego-centric video to enable an embodied agent to understand daily activities based on the video sequence and large language models.
  - **Cross-view Multi-Object Tracking** Sept. 2021 - Present  
Cross-view multi-object tracking aims to associate objects between frames and camera views with geometric constraints, object representations, and query embeddings.
  - **Embodied Agent in Virtual Environment** Jul. 2023 - Apr. 2024  
This work presents an advanced embodied agent for Minecraft that integrates vision perception, language instruction, and code action to interpret visual information, decompose tasks, and execute skill actions.
  - **Fashion Design by Diffusion Models** Dec. 2022 - Sept. 2023  
This work presents DiffFashion, a novel diffusion model for reference-based fashion design that combines reference appearance and clothing images to generate new fashion images.
  - **Weakly Supervised Instance Segmentation** Apr. 2021 - Oct. 2021  
This work introduces a weakly supervised instance segmentation method that uses bounding box tightness and contour priors to improve mask prediction and achieve superior performance.

## TEACHING EXPERIENCE

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- **ECE365: Data Science and Engineering**, Teaching Assistant Spring 2023
  - **CS412: Introduction to Data Mining**, Teaching Assistant Fall 2022

## AWARDS AND HONORS

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- **Outstanding Graduate Student**, Zhejiang University Dec. 2022
  - **First-Class Academic Scholarship**, Beijing University of Posts and Telecommunications 2017 - 2020
  - **Outstanding Graduate**, Shenyang Ligong University Dec. 2016

## ACADEMIC SERVICE

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**Reviewer**, Neurips 2024, ACM MM 2024, ECCV 2024, CVPR 2024, ICASSP 2023, KBS