Jie Liu

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Professional Summary

I am a Ph.D. candidate at the University of Amsterdam. My research aims to develop human-centered machines that augment human capabilities in **perception, reasoning, and interaction with the world**. To achieve this, I am focusing on following topics:

- **Human-AI Interaction**: Interactive Segmentation , Embodied Multi-agent Cooperation/Reasoning.
- **Foundation Models**: Vision-language Models, Multi-modal Large Language Models, Probabilistic Modeling.
- **Generative Models**: Human-Scene Interaction Motion synthesis, Diffusion Models, Autoregressive Models.

Education

University of Amsterdam *Amsterdam*
Ph.D. in CS Se p. 2021 - Sep. 2025
Northeastern University *Shenyang*
MS in EE Sep. 2018 - June. 2021

Internship

Meshcapade (spin-off from Max Planck Institute for Intelligent Systems) *Tübingen / Remote*
ML Research Scientist Intern May. 2025 – Present

Conducting research on human-object interaction synthesis from human instructions. Focusing on motion generation using diffusion and autoregressive models, with high-level planning guided by large language models and vision-language models.

Publications

[1] Penyu Zhang, Klim Zaporojets, **Jie Liu**, Paul Groth. "Beyond Images - Are a Thousand Words Better Than a Single Picture? A Framework for Multi-Modal Knowledge Graph Dataset Enrichment" [*Under Review in ECAI2025*]

[2] **Jie Liu**, Zhiheng Yang, Pan Zhou, Lars Johannes Isaksson, Jan-Jakob Sonke, Efstratios Gavves. "ProSeg: Proactive Interactive Medical Segmentation with Click and Slice Recommendation" [*Under Review in MICCAI2025*]

[3] **Jie Liu**, Jiayi Shen, Pan Zhou, Jan-Jakob Sonke, Efstratios Gavves. "Probabilistic Prototype Calibration of Vision-Language Models for Generalized Few-shot Segmentation," [*ICCV2025*]

[4] **Jie Liu**, Pan Zhou, Zehao Xiao, Jiayi Shen, Wenzhe Yin, Jan-Jakob Sonke, Efstratios Gavves. "Probabilistic Interactive 3D Segmentation with Hierarchical Neural Process" [*ICML2025*]

[5] **Jie Liu**, Pan Zhou, Yingjun Du, Ah-Hwee Tan, Cess Snoek, Jan-Jakob Sonke, Efstratios Gavves. "Cooperative Plan Optimization for Embodied Multi-agent Cooperation," [*ICLR2025*]

[6] **Jie Liu**, Haochen Wang, Wenzhe Yin, Jan-Jakob Sonke, Efstratios Gavves. "Click Prompt Learning with Optimal Transport for Interactive Segmentation," [*ECCV 2024*]

[7] **Jie Liu**, Wenzhe Yin, Haochen Wang , Yunlu Chen, Jan-Jakob Sonke, Efstratios Gavves. "Dynamic Prototype Adaption with Distillation for Few-shot Point Cloud Segmentation," [*3DV 2024*]

[8] **Jie Liu**, Yanqi Bao, Wenzhe Yin, Haochen Wang, Jan-Jakob Sonke, Efstratios Gavves. "Few-shot Semantic Segmentation with Support-induced Graph Convolutional Network," [*BMVC2022*]

[9] **Jie Liu**, Yanqi Bao, Huan Xiong, Guosen Xie, Jan-Jakob Sonke, Efstratios Gavves. "Dynamic Prototype Convolution for Few-shot Semantic Segmentation," [*CVPR2022*]

[10] Guo-sen Xie*, **Jie Liu***, Huan Xiong, Ling Shao. "Scale-aware Graph Neural Network for Few-shot Semantic Segmentation," [*CVPR 2021*] (*Equal Contribution)

[11] Haochen Wang, **Jie Liu**, Yongtuo Liu, Jan-Jakob Sonke, Efstratios Gavves. "Dynamic Transformer for Few-shot Instance Segmentation," [*ACM Multi Media 2022*]

[12] Guo-Sen Xie, Huan Xiong, **Jie Liu**, Ling Shao. "Few-shot Semantic Segmentation with Cyclic Memory Network," [*ICCV2021*]

[13] Cilin Yan, Haochen Wang, **Jie Liu**, Xiaolong Jiang, Yao Hu, Xu Tang, Guoliang Kang, Efstratios Gavves. "PiClick: Picking the Desired Mask in Click-based Interactive Segmentation," [*TMM2024*]

Volunteer Services

Conference/Journal Reviewer

ICLR, CVPR, ICCV, ECCV, ACMMM, TPAMI, IJCV