

# Junxuan Liang

✉ whitefork@sjtu.edu.cn    🔗 <https://hitefork.github.io>    🌐 hitefork

## RESEARCH INTERESTS

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My research interests mainly lie in **Embodied AI**. I am now focusing on the application of **diffusion models**, exploring its potential for **human motion generation and human motion control**. I also have a background in human motion analysis, video object segmentation.

## EDUCATION

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### SEIEE, Shanghai Jiao Tong University

B.Eng. in Computer Science, Zhiyuan Honors Program of Engineering

Core Courses: Machine Learning, Computational Theory, Modern Operating System

Shanghai, China

Sept 2022 – Present

## PUBLICATIONS

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### ImDy: Human Inverse Dynamics from Imitated Observations

Xinpeng Liu, Junxuan Liang, Zili Lin, Haowen Hou, Yong-Lu Li\*, Cewu Lu\* (\*=corresponding authors).

Under review as a conference paper at ICLR 2025. [[foruck.github.io/ImDy/](https://github.com/foruck/ImDy)] [[Arxiv:2410.17610](https://arxiv.org/abs/2410.17610)]

### Homogeneous Dynamics Space for Heterogeneous Humans

Xinpeng Liu, Junxuan Liang, Chenshuo Zhang, Zixuan Cai, Cewu Lu\*, Yong-Lu Li\*(\*=corresponding authors).

Under review as a conference paper. [[foruck.github.io/HDyS/](https://github.com/foruck/HDyS/)] [[Arxiv:2412.06146](https://arxiv.org/abs/2412.06146)]

### M<sup>3</sup>-VOS: Multi-Phase, Multi-Transition, and Multi-Scenery Video Object Segmentation

Zixuan Chen, Jiaxin Li, Junxuan Liang, Liming Tan, Yejie Guo, Cewu Lu\*, Yong-Lu Li\*(\*=corresponding authors).

Under review as a conference paper.

## EXPERIENCE

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### Shanghai Jiao Tong University - Machine Vision and Intelligence Group

Undergraduate Research Assistant - Supervisor: Prof. Cewu Lu and Prof. Yong-Lu Li

Shanghai, China

June 2022 – Present

- Exploited the recently progressive human motion imitation algorithms to train a data-driven human inverse dynamics solver in a fully supervised manner
- Proposed a fundamental reusable space HDyS for human dynamics by unifying the heterogeneity
- built a video object segmentation benchmark focused on object phase transitions

### Shanghai Jiao Tong University - Department of Electrical Engineering

Undergraduate Research Assistant - Supervisor: Prof. Xiaoyuan Xu

Shanghai, China

Feb 2022 – June 2022

- Proposed a distributed photovoltaic state monitoring model based on sparse coding, and distributed robust logistic regression algorithms

## SELECTED AWARDS

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Zhiyuan Honors Program Scholarship, SJTU, Shanghai, China

2023

Third-Class Scholarship, SJTU, Shanghai, China

2024

Academic Progress Scholarship, SJTU, Shanghai, China

2025

**Merit Student** (top 3%), SJTU, Shanghai, China

2024

**Meritorious Winner** of Mathematical Contest In Modelling (Top 6.6%), America

2024

**Outstanding Winner** of Electronic&Electrical Engineering Innovation Competition, China

2024

## SKILLS

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- **Languages:** English (CET6 528), Native Cantonese & Mandarin
- **Programming:** Python(Pytorch), C/C++, Linux, Nimble Physics, Latex, Typst