

# Junyi Zhang

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## RESEARCH INTERESTS

My research interests mainly lie in **computer vision**, **deep generative models**, and **representation learning**. I am now focusing on the **application of diffusion models**, exploring its potential for **both generation and perception scenarios**. I also have a background in action recognition, self-supervised learning, and other modalities including video, 3D, human motion, and language.

## EDUCATION

**SEIEE, Shanghai Jiao Tong University**

Shanghai, China

Major in Computer Science and Technology, GPA: 3.92 (8/108)

Sept. 2020 - Present

**Zhiyuan College, Shanghai Jiao Tong University**

Major in Zhiyuan Honors Program of Engineering (Top 5%)

## SELECTED AWARDS

**Microsoft Research “Stars of Tomorrow” Certificate** (Top 10% interns)

2022

Huawei Fellowship (Top 1% in honors program)

**National Scholarship** (Top 0.2% nationwide, highest honor in China)

2021

Outstanding Undergraduate Scholarship, A Level, SJTU (Top 1%)

## PUBLICATIONS

**A Tale of Two Features: Stable Diffusion Complements DINO for Zero-Shot Semantic Correspondence**

Junyi Zhang, Charles Herrmann, Junhwa Hur, Luisa F. Polanía, Varun Jampani, Deqing Sun, Ming-Hsuan Yang.

*NeurIPS*, 2023. [\[Webpage\]](#) [\[Code\]](#) [\[ArXiv\]](#)

**LayoutDiffusion: Improving Graphic Layout Generation by Discrete Diffusion Probabilistic Models**

Junyi Zhang, Jiaqi Guo, Shizhao Sun, Jian-Guang Lou, Dongmei Zhang.

*ICCV*, 2023. [\[Code\]](#) [\[ArXiv\]](#)

**From Isolated Islands to Pangea: Unifying Semantic Space for Human Action Understanding**

Yong-Lu Li\*, Xiaoqian Wu\*, Xinpeng Liu, Yiming Dou, Yikun Ji, Junyi Zhang, Yixing Li, Xudong Lu, Jingru Tan, Cewu Lu.

*Under review*, 2023. [\[Webpage\]](#) [\[ArXiv\]](#)

**Mining Cross-Person Cues for Body-Part Interactiveness Learning in HOI Detection**

Xiaoqian Wu\*, Yong-Lu Li\*, Xinpeng Liu, Junyi Zhang, Yuzhe Wu, Cewu Lu.

*ECCV*, 2022. [\[Code\]](#) [\[ArXiv\]](#)

## EXPERIENCE

**University of California, Merced - Vision Learning Lab**

Merced, California

Visiting Student – Supervisor: *Prof.* Ming-Hsuan Yang

June 2023 - Present

- Explore diffusion representations for semantic correspondence

**Microsoft Research Asia - Data, Knowledge and Intelligence Group**

Beijing, China

Research Intern – Mentor: *Dr.* Shizhao Sun and *Dr.* Jian-Guang Lou

July 2022 - Dec. 2022

- Build discrete diffusion models for layout synthesis

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

Shanghai, China

Undergraduate Research Intern – Supervisor: *Prof.* Yong-Lu Li

Oct. 2021 - Present

- Build diffusion models for interactive motion generation

- Experiment on extending multimodal action recognition to video dataset
- Experiment on incorporating human knowledge into HOI detection

## SKILLS

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- **Skills:** Python (Pytorch), C/C++, html, css, Linux, L<sup>A</sup>T<sub>E</sub>X, Assembly language
- **Languages:** English (TOEFL 105/120), Chinese (Native)

## REFERENCES

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- **Ming-Hsuan Yang**, Professor of EECS University of California, Merced; Research Scientist, Google Research
- **Deqing Sun**, Research Scientist, Google Research
- **Varun Jampani**, Research Scientist, Google Research
- **Charles Herrmann**, Research Scientist, Google Research
- **Junhwa Hur**, Research Scientist, Google Research
- **Jian-Guang Lou**, Principle Researcher, Microsoft Research
- **Shizhao Sun**, Senior Researcher, Microsoft Research
- **Yong-Lu Li**, Assistant Professor of Computer Science Shanghai Jiao Tong University