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%)

PUBLICATIONS

Telling Left from Right: Identifying Geometry-Aware Semantic Correspondence
Junyi Zhang, Charles Herrmann, Junhwa Hur, Eric Chen, Varun Jampani, Deqing Sun, Ming-Hsuan Yang.
Under review, 2023. [Webpage] [ArXiv:2311.17034]

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:2305.15347]

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:2303.11589]

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:2304.00553]

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:2207.14192]

EXPERIENCE

University of California, Merced - Vision Learning Lab   *Merced, California*
Visiting Student – Supervisor: *Prof.* Ming-Hsuan Yang   June 2023 - Present
- Explore and improvediffusion 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

Selected awards

SenseTime Scholarship (30 undergraduate AI researcher nationwide)	2023
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%)	

Skills

- **Skills:** Python (Pytorch), C/C++, html, css, Linux, LaTeX, Assembly language
- **Languages:** English (TOEFL 105/120), Chinese (Native)

References

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