Hansheng Chen

📍 Stanford, CA

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Education

Stanford University   Stanford, CA
Ph.D. in Computer Science   Sept 2023 – Present

Tongji University   Shanghai
M.S.E. in Vehicle Engineering, GPA 4.84/5.0   Sept 2020 – June 2023
    Co-advised by Prof. Lu Xiong and Prof. Wei Tian.
B.E. in Vehicle Engineering (5 years), GPA 4.7/5.0   Sept 2015 – July 2020

Research Experience

I am passionate about computer graphics and vision research, currently with a specific focus on 3D generation, reconstruction, and neural rendering. Previously, I was experienced in image-based 6DoF pose estimation using geometric vision.

Stanford University   Stanford, CA
Research Assistant   Sept 2023 – Present

- Currently rotating with Prof. Leonidas Guibas, working on 3D editing with diffusion models.

SU Lab, UC San Diego   (Remote)
Research Intern   May 2022 – Mar 2023

- Worked in Prof. Hao Su's lab on generative radiance fields with diffusion models.

DAMO Academy, Alibaba Group   Hangzhou, Zhejiang
Research Intern   June 2021 – Dec 2021

- Worked with Dr. Pichao Wang and Dr. Fan Wang on probabilistic 6DoF pose estimation using perspective geometry.

Tongji University   Shanghai
Research Assistant   Sept 2019 – June 2023

- Worked in Prof. Wei Tian's group on probabilistic 6DoF pose estimation using perspective geometry, and its application in 3D object detection.

Engineering Projects

As a racing enthusiast, I worked on Formula SAE aerodynamics during my undergraduate years.

TJU Racing, Tongji University   Shanghai
Aerodynamics Lead   Mar 2018 – June 2019

- Directed the aerodynamics group, worked on improving the aero efficiency and CFD accuracy.

Honors and Awards

- Excellent Graduate of Shanghai, 2023
- CVPR Best Student Paper Award, 2022
- Excellent Graduate of Tongji University, 2020
- FSAE Japan Best Aerodynamics Award, 2019

Publications

One-2-3-45++: Fast Single Image to 3D Objects with Consistent Multi-View Generation and 3D Diffusion. Minghua Liu, Ruoxi Shi, Linghao Chen, Zhuoyang Zhang, Chao Xu, Xinyue Wei, **Hansheng Chen**, Chong Zeng, Jiayuan Gu, Hao Su. *arXiv:2311.07885*, 2023.

Zero123++: a Single Image to Consistent Multi-view Diffusion Base Model. Ruoxi Shi, **Hansheng Chen**, Zhuoyang Zhang, Minghua Liu, Chao Xu, Xinyue Wei, Linghao Chen, Chong Zeng, Hao Su. Technical report, 2023.

Single-Stage Diffusion NeRF: A Unified Approach to 3D Generation and Reconstruction. **Hansheng Chen**, Jiatao Gu, Anpei Chen, Wei Tian, Zhuowen Tu, Lingjie Liu, Hao Su. In *ICCV*, 2023.

EPro-PnP: Generalized End-to-End Probabilistic Perspective-n-Points for Monocular Object Pose Estimation. **Hansheng Chen**, Wei Tian, Pichao Wang, Fan Wang, Lu Xiong, Hao Li. In *TPAMI*, 2024 (invited paper).

EPro-PnP: Generalized End-to-End Probabilistic Perspective-n-Points for Monocular Object Pose Estimation. **Hansheng Chen**, Pichao Wang, Fan Wang, Wei Tian, Lu Xiong, Hao Li. In *CVPR*, 2022 (**Oral, Best Student Paper**).

MonoRUn: Monocular 3D Object Detection by Reconstruction and Uncertainty Propagation. **Hansheng Chen**, Yuyao Huang, Wei Tian, Zhong Gao, Lu Xiong. In *CVPR*, 2021.

SPFCN: Select and Prune the Fully Convolutional Networks for Real-time Parking Slot Detection. Zhuoping Yu, Zhong Gao, **Hansheng Chen**, Yuyao Huang. In *IEEE Intelligent Vehicles Symposium (IV)*, 2020.

Services

Reviewer for CVPR, ICCV, SIGGRAPH, EUROGRAPHICS, IEEE TPAMI, IEEE TCSVT

Talks

- End-to-End 3D Vision and Graphics
  - ETHZ AIT Lab
  - CUHKSZ GAP Lab PaSS (in Chinese)
- Single-Stage Diffusion NeRF: A Unified Approach to 3D Generation and Reconstruction
  - University of Tübingen Autonomous Vision Group
  - VALSE 2023 (in Chinese)
- EPro-PnP: Generalized End-to-End Probabilistic Perspective-n-Points for Monocular Object Pose Estimation
  - CVPR 2022 Best Student Paper presentation
  - ReadPaper, hosted by Prof. Harry Shum (in Chinese)
  - Didi Chuxing Technology Co. (in Chinese)
  - Beijing Academy of Artificial Intelligence (in Chinese)
  - TechBeat (in Chinese)
  - HKUMed seminar
  - WAIC 2022 (in Chinese)

Miscellaneous

I used to be a hobbyist VFX creator, and the virtual experience spurred my interest in real photography. These hobbies have been motivating my research in computer graphics, especially 3D content creation and rendering.