

Naiyu Fang

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[Google Scholar](#) / [Research Gate](#) / [ORCID iD](#)

EDUCATION

Zhejiang University

PhD Candidate / Mechanical Engineering

Hangzhou, China

09/2019 - Present

- Advisor: Prof. Shuyou Zhang & Prof. Lemiao Qiu

Dalian University of Technology

Bachelor / Mechanical Engineering

Dalian, China

09/2015 - 06/2019

- Dean's List for Overall Major GPA (Top 5%)

PUBLICATION

Published

- **Naiyu Fang**, Lemiao Qiu*, Shuyou Zhang et al. 2023. A Cross-Scale Hierarchical Transformer with Correspondence-Augmented Attention for Inferring Bird's-Eye-View Semantic Segmentation. IEEE Transactions on Intelligent Transportation Systems (In Revision). [\[pdf\]](#)
- **Naiyu Fang**, Lemiao Qiu*, Shuyou Zhang et al. 2023. A Novel DAGAN for Synthesizing Garment Images Based on Design Attribute Disentangled Representation. Pattern Recognition. [\[pdf\]](#)
- **Naiyu Fang**, Lemiao Qiu*, Shuyou Zhang et al. 2022. A Novel Human Image Sequence Synthesis Method by Pose-Shape-Content Inference. IEEE Transactions on Multimedia. [\[pdf\]](#)
- **Naiyu Fang**, Lemiao Qiu*, Shuyou Zhang et al. 2021. A Modeling Method for the Human Body Model with Facial Morphology. Computer-Aided Design. [\[pdf\]](#)
- **Naiyu Fang**, Lemiao Qiu*, Shuyou Zhang et al. 2022. Multi-Category Garments Virtual Try-on Method by Coarse to Fine TPS Deformation. Neural Computing and Applications. [\[pdf\]](#)
- **Naiyu Fang**, Lemiao Qiu*, Shuyou Zhang et al. 2022. The Rapid Construction Method of Human Body Model for Virtual Try-on on Mobile Terminal Based on MDD-Net. Soft Computing. [\[pdf\]](#)
- Dong Liu, Minghao Wang, **Naiyu Fang** et al. 2020. Design and Tests of A Non-Contact Bernoulli Gripper for Rough-Surfaced and Fragile Objects Gripping. Assembly Automation. [\[pdf\]](#)

In Peer Review

- **Naiyu Fang**, Lemiao Qiu*, Shuyou Zhang et al. 2023. GSDC Transformer: An Efficient and Effective Cue Fusion for Monocular Multi-Frame Depth Estimation. [\[pdf\]](#)
- **Naiyu Fang**, Lemiao Qiu*, Shuyou Zhang et al. 2023. PG-VTON: A Novel Image-Based Virtual Try-On Method via Progressive Inference Paradigm. [\[pdf\]](#)
- **Naiyu Fang**, Lemiao Qiu*, Shuyou Zhang et al. 2023. A Novel Garment Transfer Method Supervised by Distilled Knowledge of Virtual Try-on Model.

RESEARCH INTEREST

My research interests primarily centered around **computer vision**, with a significant emphasis on **autonomous driving** and **virtual try-on** applications.

- **Visual-only autonomous driving upstream tasks**

- It centered on the precision and efficiency issues in camera image-based perception of surrounding scenes. I have conducted the semantic segmentation task of vehicle and road on bird's-eye view plane, and an efficiency-oriented cue fusion task for multi-frame monocular depth estimation.

- **Image-based virtual try-on visual tasks**

- It revolved around visual realism and representation form issues. I have proposed a progressive pipeline of virtual try-on, a learning paradigm of garment transfer through cross-task knowledge distillation, an unsupervised synthesis method of garment images, and an image sequence inference method via pose interpolation.

RESEARCH EXPERIENCE

- **The National Key R&D Program of China**

Grant Number: 2018YFB1700700

Source: China's Ministry of Science and Technology

09/2019 - 08/2023

- As the group leader of the clothing sub-project, mastered its integral research development.
- As the first author, published 5 articles on journal and applied 5 Chinese patents.
- As the major contributor, developed an Android-based APP for virtual try-on.
- As the major contributor, prepared reports and activities throughout the project lifecycle.

- **The Pioneer and Leading Goose R&D Program of Zhejiang**

Grant Number: 2022C01051

Source: Department of Science and Technology of Zhejiang Province

09/2022 - Present

- As the major contributor, prepared the materials for project application.
- As the project assistant, helped guide groupmates in task determination and paper writing.

AWARD

- Awarded for the National Scholarship *2023*
- Funded for Dissertation of Distinguished Doctorates in Zhejiang University *2022-2023*
- Awarded for Cen Kefa First-Class Scholarship (Top 2.5%) *2022*
- Awarded for Lu Zengqi FPTC High-Technology of Distinguished Doctorates Scholarship *2022*
- Awarded for Outstanding Graduate of Dalian *2019*
- Awarded for Outstanding Dissertation of Dalian University of Technology *2019*
- Awarded for HIWIN Special Scholarship *2017*

SKILLS

- Skilled in idea implementation tools Python, PyTorch, and MATLAB.
- Familiar with development tools Java, Android, and C++.
- Proficient in article writing tools Latex, Word, and Visio.