Lang Nie

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I am currently a first-year Ph.D. student and I am looking for a research intern position with special interest in computational photography and deep learning.

Education

2021–2025 **Beijing Jiaotong University**, *Ph.D.*, Information and Communication Engineering
2019–2021 **Beijing Jiaotong University**, *M.Sc.*, Signal and Information Processing (Rank: 1/43)
2015–2019 **Beijing Jiaotong University**, *B.Sc.*, Computer Science and Technology (Rank: 12/200)

Research Interests

— **Computational Photography and Deep Learning**
Image Stitching, Image Alignment, Image Rectangling, Image Resize, Tilt Correction, Homography Estimation

— **Panoramic Understanding**
Object Detection, Semantic Segmentation, Depth Estimation, Layout Estimation

Selected Publications

In Submission

[1] **Lang Nie**, Chunyu Lin, Kang Liao, Shuaicheng Liu, Yao Zhao. Deep Rotation Correction without Angle Prior, ***Submitted to IEEE TIP 2022***.

[2] Zhijie Shen, Chunyu Lin, Kang Liao, **Lang Nie**, Zishuo Zheng, Yao Zhao. PanoFormer: Panorama Transformer for Indoor 360° Depth Estimation, ***Submitted to ECCV 2022***.

[3] Zishuo Zheng, Chunyu Lin, **Lang Nie**, Kang Liao, Yao Zhao. Complementary Bi-directional Feature Compression for Indoor 360° Semantic Segmentation with Self-distillation, ***Submitted to ECCV 2022***.

[4] Zhijie Shen, Chunyu Lin, **Lang Nie**, Kang Liao, Yao Zhao. Neural Contourlet Network for Monocular 360° Depth Estimation, ***Submitted to IEEE TCSVT 2022***.

[5] Zishuo Zheng, Chunyu Lin, **Lang Nie**, Kang Liao, Yao Zhao. Bi-Projection for 360° Image Object Detection Bridged by RoI Searcher, ***Submitted to JVCIR 2022***.

2022

[1] **Lang Nie**, Chunyu Lin, Kang Liao, Shuaicheng Liu, Yao Zhao. Deep Rectangling for Image Stitching: A Learning Baseline, *IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR Oral Presentation**).

[2] Chunlan Zhang, Chunyu Lin, Kang Liao, **Lang Nie**, Yao Zhao. SivsFormer: Parallax-Aware Transformers for Single-image-based View Synthesis, *IEEE Conference on Virtual Reality and 3D User Interfaces* (**IEEE VR**).

2021

[1] **Lang Nie**, Chunyu Lin, Kang Liao, Shuaicheng Liu, Yao Zhao. Unsupervised Deep Image Stitching: Reconstructing Stitched Features to Images, *IEEE Transactions on Image Processing* (**IEEE TIP**).

[2] **Lang Nie**, Chunyu Lin, Kang Liao, Shuaicheng Liu, Yao Zhao. Depth-Aware Multi-Grid Deep Homography Estimation with Contextual Correlation, *IEEE Transactions on Circuits and Systems for Video Technology* (**IEEE TCSVT**).

[3] **Lang Nie**, Chunyu Lin, Kang Liao, Yao Zhao. Learning Edge-Preserved Image Stitching from Multi-Scale Deep Homography, *Neurocomputing* (**NEUCOM**).

[4] Zhijie Shen, Chunyu Lin, **Lang Nie**, Kang Liao, Yao Zhao. Distortion-Tolerant Monocular Depth Estimation on Omnidirectional Image using Dual-Cubemap, *IEEE International Conference on Multimedia and Expo* (**ICME**).

2020

[1] **Lang Nie**, Chunyu Lin, Kang Liao, Yao Zhao. A View-Free Image Stitching Network Based on Global Homography, *Journal of Visual Communication and Image Representation* (**JVCIR**).

Selected Honors & Awards

Apr. 2022 PhD Innovation Fund of BJTU

Oct. 2021 First-class PhD academic scholarship of BJTU

Oct. 2020 China national scholarship (3% awarded)

Oct. 2019 First-class graduate students academic scholarship of BJTU

Academic Service & Activity

— **Reviewer**
CVPR 2022, ECCV 2022, Neurocomputing

— **Talk**
Unsupervised Deep Image Stitching, *Graduate academic forum of Chinese journal of image and graphics*, Sep. 2021

Exploring Deep Image Warp, *Extreme mart* , Apr. 2022

Technical Skills

"*I am in the habit of releasing the source codes of my works. The related repositories can be found at https://github.com/nie-lang.*"

Programming C/C++, Matlab, Python

Frameworks TensorFlow, PyTorch

Tools Git, LaTeX