

YINYU NIE

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Visual Computing Group, Department of Informatics, Technical University of Munich
Boltzmannstraße 3, 85748 Garching, Germany

EDUCATION

Bournemouth University, U.K.

January 2017 - April 2021

PhD, Scene understanding and reconstruction, 3D shape analysis.

Thesis: “Content-aware indoor scene understanding and reconstruction”.

National Centre for Computer Animation, Faculty of Media and Communication.

Southwest Jiaotong University, China.

September 2014 - December 2016

MEng, Vehicle system dynamics, Photo-based vehicle body modelling.

Thesis: “Data-driven simulation framework for railway vehicle dynamics”.

State Key Laboratory of Traction Power.

Southwest Jiaotong University, China.

September 2010 - June 2014

BSc, Statistics.

School of Mathematics.

RESEARCH INTERESTS

3D Computer Vision and Graphics including: 3D scene analysis, understanding and modeling, 3D shape retrieval, completion and reconstruction.

SKILLS

Proficient in Deep Learning, Machine Learning, Pytorch, Matlab, Mathematica, etc.

RESEARCH & PROJECTS

Technical University of Munich, Germany

April 2021 - Present

Post-doctoral researcher with Prof. Matthias Niessner

National Centre for Computer Animation, U.K.

January 2017 - January 2021

Postgraduate researcher

Topics: Content-aware indoor scene understanding and modeling.

Supervisors: Jian Chang, Jian J Zhang.

The Chinese University of Hong Kong (Shenzhen), China

August 2019 - December 2020

Visiting PhD researcher

Topics: 3D scene understanding and reconstruction.

Project Instructor: Xiaoguang Han.

State Key Laboratory of Traction Power, China.

September 2013 - December 2016

Postgraduate researcher

Topics: Photo-based 3D modelling of train accident scenes; Data-driven vehicle dynamics simulation.

Supervisors: Jian J Zhang, Zhao Tang.

MAIN PUBLICATIONS

- Nie, Y.**, Hou, J., Han, X. and Nießner, M., 2020. RfD-Net: Point Scene Understanding by Semantic Instance Reconstruction. (CVPR 2021)
- Nie, Y.**, Han, X., Lin, Y., Guo, S., Chang, J., Cui, S. and Zhang, J.J., 2020. Skeleton-bridged Point Completion: From Global Inference to Local Adjustment. (NeurIPS 2020)
- Du, D., Zhu, H., **Nie, Y.**, Han, X., Cui, S., Yu, Y., Liu, L, 2020. Learning Part Generation and Assembly for Sketching Man-Made Objects. (Computer Graphics Forum)
- Nie, Y.**, Han, X., Guo, S., Zheng, Y., Chang, J. and Zhang, J.J., 2020. Total3DUnderstanding: Joint Layout, Object Pose and Mesh Reconstruction for Indoor Scenes from a Single Image. arXiv preprint arXiv:2002.12212. (CVPR2020 **Oral, Paper Award nominee**)
- Zhang, J., **Nie, Y.**, Lyu, Y., Li, H., Chang, J., Yang, X., Zhang, J.J., 2020. Symmetric Dilated Convolution for Surgical Gesture Recognition. arXiv preprint arXiv:2007.06373. (MICCAI 2020, **Student Award**)
- Nie, Y.**, Guo, S., Chang, J., Han, X., Huang, J., Hu, S.M. and Zhang, J.J., 2020. Shallow2Deep: Indoor scene modeling by single image understanding. Pattern Recognition, 103, p.107271.
- Nie, Y.**, Chang, J., Chaudhry, E., Guo, S., Smart, A. and Zhang, J.J., 2018. Semantic modeling of indoor scenes with support inference from a single photograph. Computer Animation and Virtual Worlds, 29(3-4), p.e1825. (CASA2018, **Best Paper Award**)