YINYU NIE

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National Centre for Computer Animation, Bournemouth University
Tolpuddle House TA134, Talbot Campus, Fern Barrow, Poole, BH12 5BB

EDUCATION

Bournemouth University, U.K. *January 2017 - Expected 2020*
PhD, Scene understanding and reconstruction, 3D shape analysis.
Thesis: "Content-aware indoor scene understanding and modeling".
National Centre for Computer Animation, Faculty of Media and Communication.

Southwest Jiaotong University, China. *September 2014 - December 2016*
MSc, 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 EXPERIENCE

National Centre for Computer Animation, U.K. *January 2017 - Present*
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 2019*
Visiting 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.

PUBLICATIONS

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**)

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)

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**)

Nie, Y., Tang, Z., Liu, F., Chang, J. and Zhang, J., 2018. A data-driven dynamics simulation framework for railway vehicles. Vehicle system dynamics, 56(3), pp.406-427.

Tang, Z.*, **Nie, Y.***, Chang, J., Zhang, J. and Liu, F., 2018. Photo-based automatic 3D reconstruction of train accident scenes. Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit, 232(1), pp.144-158.

Xu, J., Tang, Z., Yuan, X., **Nie, Y.**, Ma, Z., Wei, X. and Zhang, J., 2018. A VR-based the emergency rescue training system of railway accident. Entertainment Computing, 27, pp.23-31.

Tang, Z.*, Zhu, Y.*, **Nie, Y.***, Guo, S., Liu, F., Chang, J. and Zhang, J., 2017. Data-driven train set crash dynamics simulation. Vehicle system dynamics, 55(2), pp.149-167.

Nie, Y.Y., Tang, Z., Yu, J.F., Zhu, Y.R., Chang, J., Zhang, J.J., Guo, S.H. and Su, Y., 2016, September. Image-based 3D Scene Reconstruction and Rescue Simulation Framework for Railway Accidents. In 2016 International Conference on Virtual Reality and Visualization (ICVRV) (pp. 335-340). IEEE.
(* indicates equal contributions)