Yifei Shi

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National University of Defense Technology

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RESEARCH INTERESTS

- Computer Vision, Computer Graphics, Robotics

EDUCATION

- **National University of Defense Technology** — Changsha, Hunan, China
  Ph.D. in Computer Science — *Mar. 2015 – Jun. 2019*

- **Princeton University** — Princeton, New Jersey, USA
  Visiting Ph.D. Student — *Mar. 2017 – Aug. 2018*

- **National University of Defense Technology** — Changsha, Hunan, China
  Master in Computer Science — *Sep. 2012 – Dec. 2014*

- **Wuhan University** — Wuhan, Hubei, China
  Bachelor in Geodesy and Geomatics — *Aug. 2008 – Jun. 2012*

EMPLOYMENT

- **National University of Defense Technology** — Changsha, Hunan, China
  Associate Professor — *Jan. 2023 - Present*

- **National University of Defense Technology** — Changsha, Hunan, China
  Assistant Professor — *Jul. 2019 - Dec. 2022*

HONORS

- NUDT Innovation Award for Young Researcher, 1st Place, 2024

- ACM China Changsha Chapter Rising Star Award, 2023

- Young Elite Scientist Sponsorship Program by China Association for Science and Technology, 2023

- Young Elite Scientist Sponsorship Program by China Graphics Society, 2022

- High-level Innovative Talent of NUDT, 2022

GRANTS

- Natural Science Fund of Hunan Province for Excellent Young Scholars, 2023.

- Science and Technology Innovation Program of Hunan Province, 2023.

- National Science Fund for Young Scholars, National Science Foundation of China, 2020.

SELECTED PUBLICATIONS

[1] **Yifei Shi**, Junhua Xi, Dewen Hu, Zhiping Cai, and Kai Xu, " RayMVSNet++: Learning Ray-based 1D Implicit Fields for Accurate Multi-View Stereo," **IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)**, 2023.

[2] **Yifei Shi**, Xin Xu, Junhua Xi, Xiaochang Hu, Dewen Hu, and Kai Xu, "Learning to Detect 3D Symmetry from Single-view RGB-D Images with Weak Supervision," **IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)**, 2023. **ESI Hot Paper (Top 0.1%)**.

[3] **Yifei Shi**, Junwen Huang, Hongjia Zhang, Xin Xu, Szymon Rusinkiewicz, and Kai Xu, "SymmetryNet: Learning to Predict Reflectional and Rotational Symmetries of 3D Shapes from Single-View RGB-D Images," **ACM Transaction on Graphics (SIGGRAPH Asia)**, 2020.

[4] **Yifei Shi**, Junwen Huang, Xin Xu, Yifan Zhang, and Kai Xu, " StablePose: Learning 6D Object Poses from Geometrically Stable Patches," **IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)**, 2021.

[5] **Yifei Shi**, Angel Chang, Manolis Savva, Zhelun Wu, and Kai Xu, "Hierarchy Denoising Recursive Autoencoders for 3D Scene Layout Prediction," **IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)**, 2019.

[6] **Yifei Shi**, Kai Xu, Matthias Niessner, Szymon Rusinkiewicz and Thomas Funkhouser, "PlaneMatch: Patch Coplanarity Prediction for Robust RGB-D Reconstruction," **IEEE European Conference on Computer Vision (ECCV)** , 2018, **Oral presentation**.

[7] **Yifei Shi**, Zixin Tang, Xiangting Cai, Hongjia Zhang, Dewen Hu, and Xin Xu, "SymmetryGrasp: Symmetry-aware Antipodal Grasp Detection from Single-view RGB-D Images," **IEEE Robotics and Automation Letters 2022 (ICRA 2023)**.

[8] **Yifei Shi**, Pinxin Long, Kai Xu, Hui Huang and Yueshan Xiong, "Data-Driven Contextual Modeling for 3D Scene Understanding," **Computers & Graphics**, 2016.

[9] Boyan Wan#, **Yifei Shi#**, and Kai Xu, "SOCS: Semantically-aware Object Coordinate Space for Category-level 6D Object Pose Estimation under Large Shape Variations," **International Conference on Computer Vision (ICCV)**, 2023. (#Joint first authors)

[10] Junhua Xi#, **Yifei Shi#**, Yijie Wang, Yulan Guo, and Kai Xu, "RayMVSNet: Learning Ray-based 1D Implicit Fields for Accurate Multi-View Stereo," **IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)**, 2022. (#Joint first authors)

[11] Zixin Tang, **Yifei Shi***, and Xin Xu, "CSGP: Closed-Loop Safe Grasp Planning via Attention-Based Deep Reinforcement Learning from Demonstrations," **IEEE Robotics and Automation Letters**, 2023. (*Corrspondence author)

[12] Maciej Halber, **Yifei Shi**, Kai Xu, and Thomas Funkhouser, "RESCAN: Inductive Instance Segmentation for Indoor RGBD Scans," **International Conference on Computer Vision (ICCV)**, 2019.

[13] Kai Xu, **Yifei Shi**, Lintao Zheng, Junyu Zhang, Min Liu, Hui Huang, Hao Su, Daniel Cohen-Or, Baoquan Chen. "3D Attention-Driven Depth Acquisition for Online Multi-Object Modeling," **ACM Transaction on Graphics (SIGGRAPH Asia)**, 2016.

[14] Kai Xu, Hui Huang, **Yifei Shi**, Hao Li, Pinxin Long, Jianong Caichen, Wei Sun, Baoquan Chen. "Autoscanning for Coupled Scene Reconstruction and Proactive Object Analysis," **ACM Transaction on Graphics (SIGGRAPH Asia)**, 2015.

[15] Min Liu, **Yifei Shi**, Lintao Zheng, Kai Xu, Hui Huang and Dinesh Manocha, "Recurrent 3D Attentional Networks for End-to-End Active Object Recognition," **Computational Visual Media (CVM)**, 2019.

[16] Min Liu, **Yifei Shi**, Lintao Zheng, and Kai Xu, "Volumetric spatial transformer network for object recognition," **SIGGRAPH Asia**, 2016.

[17] Yi Sun, Jian Li, Xin Xu, and **Yifei Shi**, "Adaptive Multi-Lane Detection based on Robust Instance Segmentation for Intelligent Vehicles," **IEEE Transactions on Intelligent Vehicles (TIV)**, 2022.

[18] Hui Tian, Chenyang Zhu, **Yifei Shi**, and Kai Xu, "SuperUDF: Self-supervised UDF Estimation for Surface Reconstruction," **IEEE Transactions on Visualization and Computer Graphics**, 2023.

TALKS

- Paper Review for Conferences: SIGGRAPH, SIGGRAPH Asia, Pacific Graphics, CVPR, ICCV, ECCV, ICRA, IROS.

- Paper Review for Journals: IEEE TPAMI, ACM TOG, IEEE TVCG, IEEE TSMC: Systems, IEEE TMM, Computer & Graphics, The Visual Computer.

- Conference Program Committee: GMP, ICVR, GDC, ICGIP, ChinaGraph.