Su Wang

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Education

Xi'an Jiaotong University, Xi'an, China *(Expected) June 2023*
Master of Computer Science and Technology | Institute of Artificial Intelligence and Robotics

Xi'an Jiaotong University, Xi'an, China *June 2020*
Bachelor of Computer Science and Technology

Publications (selected)

- **S. Wang**, Y. Li, M. Yang, J. Nie, R. Huang Y. Liu "TADP: Task-Aware Deformable Prediction for Single-Stage 3D Object Detection." Submitted to textit2023 IEEE International Conference on Robotics and Automation (under peer review).
- M. Yang, **S. Wang**, Y. Li, S. Yang Y. Liu "RITNet: A Rotation Invariant Transformer based Network for Point Cloud Registration." *2022 IEEE International Conference on Tools with Artificial Intelligence* (accepted for presenter session).
- S. Yuan, Q. Zhang, L. Zhu, **S. Wang**, Y. Zang X. Zhao "Multi-level Object Detection by Multi-Sensor Perception of Traffic Scenes." Neurocomputing, 2022 (accepted for presenter session).

Research Experience (selected)

Task-Aware Deformable Prediction for Single-Stage 3D Object Detection *January 2022 – September 2022*
- Designed TFRA module to extract 3D features with triple scales.
- MSFA module is constructed to adopt to fuse features in the scale-aware method.
- Propose a plug-and-play head TADH which is to reduce the misalignment of features in all tasks.

Rotation Invariant Transformer for Point Cloud Registration *March 2022 – August 2022*
- A rotation invariant representation is applied to feature extraction of point cloud registration.
- A fast pre-processing step rotation invariant sampling is proposed.

Multi-level Object Detection by Multi-Sensor Perception of Traffic Scenes *February 2021 – May 2022*
- Improved RetinaNet designed by the optimization of the sub-network of ResNet.
- Develop centripetal offset module and deformable module to improve the accuracy of corner matching.
- Proposed a completely new increased steps way to segment the frustum based on 2D and 3D.

Reinforced Attentional 3D Object Detection with Residual Sparse Convolution *October 2021 – July 2022*
- We propose the stacked triple attention mechanism to enhance crucial features of the voxels.
- Then ResSpConv3D unit is designed to replace the normal 3D sparse convolution.
- proposed attentional feature fusion module is incorporated into the region proposal network.

Frustum PointNet for 3D Object Detection from Traffic Scenes *August 2020 – May 2021*
- we segment the point cloud frustums evenly and apply multi-scale sliding window to extract local features.
- A new class-aware fusion method based on self-attention for 2D and 3D is developed.

Project Experience (selected)

Ascend Ecological Development Department *March 2022 – June 2022*
Research Assistant, Huawei Ascend
- Transplanted the deep learning model to Huawei's Ascend AI processor for deployment.
- Completed the compatibility and performance verification of both systems.
- Achieved the required accuracy and performance on the Ascend AI processor about several DL models.

Boyun Vision (Beijing) Technology *February 2021 – June 2021*
Research Assistant, BoYun Vision
- Designed a detector and classifier for objects upon daily photos.
- Designed an anomaly detector for road guardrail photos upload.
- Embedded the detector into the app.

Activity

- TA of *Principles and Technology of Artificial Intelligence & Data Structure.*
- Class monitor in *Xi'an Jiaotong University.*
- Vice Chairman in *Student Union of Suzhou Research Institute, Xi'an Jiaotong University* .