Juan Wang

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Research Interests

3D Scene Understanding, Semantic Segmentation, Object Detection, Image Recognition.

Education

Tohoku University, Ph.D. 2023.4 - now

Communication Engineering, Graduate School of Engineering *Sendai, Japan*

Core Coursework: Computer Science Fundamentals, Communication Systems, PBL for In-Vehicle Image Recognition Applications

Hohai University, M.Eng. 2018.9 - 2021.6

Software Engineering, School of Information Science *Nanjing, China*

Core Coursework: Algorithm Design and Analysis, Software Development, Software Testing

Jishou University, B.Eng. 2014.9 - 2018.6

Software Engineering, School of Software *Zhangjiajie, China*

Core Coursework: Linear Algebra, Probability Theory and Mathematical Statistics, C++, C, Java, Database Principles, Operating System Principles, Compilation Principles

Research Experience

RIKEN, Guardian Robot Project (GRP) 2025.5 - 2025.8

Trainee, Multimodal Data Recognition Research Team *Remote, Japan*

- Class-Agnostic 3D Segmentation without Manual Labels by 2D Mask Tracking

Tohoku University 2023.4 - now

Research Assistant, Image Information Communication Lab. *Sendai, Japan*

- Open-vocabulary 3D Scene Understanding: Training models by jointly aligning the point cloud embedding with the textual and image embeddings from CLIP to achieve zero-shot segmentation in 3D space.

Tohoku University 2024.3 - 2024.7

Teaching Assistant, Graduate School of Information Sciences *Sendai, Japan*

- Course: Data Science Programming Basics; Data Engineering

37 Interactive Entertainment 2021.7 - 2023.1

Software Development Engineer *Guangzhou, China*

- Collect and analyze advertising data
- Collaborate with the team to deploy the advertising algorithms in the product environment

Hohai University 2019.9 - 2021.7

Research Assistant, Computer Vision Lab. *Nanjing, China*

- Project 1: Deformable Feature Pyramid Network for Aluminum Profile Surface
  - Proposed a Deformable Feature Pyramid module to detect aluminum profile defects.
- Project 2: Research on Defect Detection Method Based on Deep Learning
  - Proposed a multi-scale defect detection network, it has less computational complexity, faster inference speed, and better accuracy than the baseline methods.

Conference

- **Juan Wang**, Zhijie Wang, Tomo Miyazaki, Shinichiro Omachi. Improved Open-Vocabulary 3D Scene Understanding via Masked Feature Alignment. MIRU2024.

Journal

- **Juan Wang**, and Zhaohui Meng. Deformable Feature Pyramid Network for Aluminum Profile Surface Defect Detection. Journal of Physics: Conference Series. Vol. 1544. No. 1. IOP Publishing, 2020.
- **Juan Wang**, Zhijie Wang, Tomo Miyazaki, Yaohou Fan, Shinichiro Omachi. TAMC: Textual Alignment and Masked Consistency for Open-Vocabulary 3D Scene Understanding. Sensors. 2024.

Workshops

- 4th International Workshop on Education and Research for Future Electronics, Nagoya
- IWEICT 2023 (The 20th International Workshop on Emerging ICT), Sendai

Skills

- Languages: English (TOEIC 755, Duolingo 115), Chinese (Native language).
- Programming: Python, Java, PHP, C++, PyTorch, Javascript(HTML, CSS), MySQL, ClickHouse, Redis, LaTex.

Awards and Honors

- Funding Support from WISE Program for AI Electronics, Tohoku University
- Outstanding Graduate Student (top 3%), Hohai University
- Outstanding Graduate Student (top 3%), JiShou University