Hongyu Wu

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RESEARCH INTERESTS

Computer Vision, Point Cloud processing, 3D World Understanding, Multi-modal Learning, Foundation Models and Self-supervised Learning

EDUCATION

University of Oklahoma , Norman, United States 9.2025 — Now
Computer Science

University van Amsterdam , Amsterdam, Netherlands 9.2022 — 8.2024
Computer Science: 8.05/10 (US grade: A)

Guizhou University, Guiyang, China 9.2018 — 7.2022
Software Engineering(big data specification): 82.32/100 (Top 10%)

ACADEMIC OUTPUTS

Hongyu Wu, Pengwan Yang, Yuki M. Asano, Cees G. M. Snoek. *Segment any 3D-Part from a sentence.* Under review at *AAAI 2026*

ACADEMIC EXPERIENCE

Open Vocabulary fine-granularity Segmentation in 3D scene Amsterdam, Netherlands
Research Intern, Qualcomm-UvA Lab Jun. — Oct. 2024

- Introduced novel task of open-vocabulary 3D part segmentation in 3D scene, enabling segmentation based on natural language descriptions
- Developed a cost-effective approach to construct a large-scale 3D-Part dataset with detailed part annotations
- Proposed two-stage "search-localize" strategy that outperforms baselines on open-vocabulary 3D part segmentation and instance segmentation tasks.

Self-Supervised Point Cloud Augmentation with Freeform Deformation Amsterdam, Netherlands
Research Intern, Qualcomm-UvA Lab Oct. 2023, — Mar. 2024

- We are the first to learn self-augmentation for 3D point clouds in an unsupervised learning manner, without using any labels.
- Technical contributions: We first develop the deformation augmentation module to generate deformed point cloud objects. Then, we develop the saliency-guided mixup module to enhance the deformation by integrating the saliency of two deformed variations.
- Extensively ablated method, demonstrating state-of-the-art **93.7%** accuracy on ModelNet40 dataset for fully supervised 3D point cloud data augmentation and superior performance across multiple tasks and settings.

PATENTS

- **Learnable Deformation for Point Cloud Self-Supervised Learning** (Patent Application No. 18/744,541)
  Inventors: Hongyu Wu, Pengwan Yang, Yuki Asano, Cornelis G.M. Snoek
  U.S. Patent Application filed with USPTO. Patent pending. Co-inventor during internship at Qualcomm.

TEACHING EXPERIENCE

Data Mining TA Amsterdam, Netherlands
Teaching Assistant, Master Course 04, 2024 — 06, 2024