

Dave Zhenyu Chen

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<https://daveredrum.github.io/>

Research Areas

My research interests lie in the joint understanding of object semantics in 3D physical world and natural language. Specifically, I'm interested in **1)** 3D scene understanding, e.g. 3D semantic/instance segmentation; **2)** Grounding natural language in 3D environments; **3)** Text-to-3D generation.

Publications

ECCV '22

D3Net: A Unified Speaker-Listener Architecture for 3D Dense Captioning and Visual Grounding.
Dave Zhenyu Chen, Qirui Wu, Matthias Nießner, Angel X. Chang

CVPR '21

Scan2Cap: Context-aware Dense Captioning in RGB-D Scans.
Dave Zhenyu Chen, Ali Gholami, Matthias Nießner, Angel X. Chang

ECCV '20

ScanRefer: 3D Object Localization in RGB-D Scan using Natural Language.
Dave Zhenyu Chen, Angel X. Chang, Matthias Nießner

In submission

Text2Tex: Text-driven Texture Synthesis via Diffusion Models.
Dave Zhenyu Chen, Yawar Siddiqui, Hsin-Ying Lee, Sergey Tulyakov, Matthias Nießner

In submission

UniT3D: A Unified Transformer for 3D Dense Captioning and Visual Grounding.
Dave Zhenyu Chen, Ronghang Hu, Xinlei Chen, Matthias Nießner, Angel X. Chang

Education

Ph.D.

[2019 -]

Technical University of Munich (TUM), Germany
Topic: Bridging 3D Physical World and Natural Language
Advised by Prof. Dr. Matthias Nießner and Prof. Dr. Angel X. Chang

M.Sc.

[2016 - 2018]

Ludwig Maximilian University of Munich (LMU), Germany
Major: Informatics; GPA: 1.59/1.00 (Top 5%, low is good)
Thesis: 3D Shape Captioning via Self-attentional Cross-Modal Joint Embedding

B.Eng.**[2012 - 2016]**

University of Electronic Science and Technology of China (UESTC), China
Major: Computer Science; GPA: 3.75/4.00 (Top 10%)

Research Experience

Visiting Student Researcher**[2022.2 - 2022.5]**

Simon Fraser University (SFU), Canada
Mentor: Prof. Dr. Angel X. Chang

Ph.D. Candidate**[2019.2 -]**

Technical University of Munich (TUM), Germany
Advisor: Prof. Dr. Matthias Nießner and Prof. Dr. Angel X. Chang

Research Intern**[2018.11 - 2019.2]**

Technical University of Munich (TUM), Germany
Mentor: Prof. Matthias Nießner Worked on cross-modal retrieval for 3D shapes

Services

Journals & Conferences

Reviewer

CVPR, ECCV, ICCV, ICRA, IJCV, WACV, 3DV, TVCG.

Workshops

Organizer

2nd Language for 3D Scenes Workshop, ECCV 2022
1st Language for 3D Scenes Workshop, CVPR 2021

Teaching

Teaching Assistant

Advanced Deep Learning for Computer Vision, 2019-2023, TUM
Practical Course: Big Data Science, 2018, LMU

Skills

Programming

Python, JavaScript, C/C++, Java, Shell, HTML,
L^AT_EX

Tools

PyTorch, TensorFlow, OpenCV, Blender

Language

Chinese (native), English (C1), German (B2)

References

Prof. Dr. Matthias Nießner

Professor, TUM

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<http://www.niessnerlab.org/index.html>

Prof. Dr. Angel X. Chang

Assistant Professor, Simon Fraser University

angelx@sfu.ca

<https://angelxuanchang.github.io/>

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