

# Dave Zhenyu Chen

I28 Visual Computing & Artificial Intelligence  
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## 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)** Cross-modal retrieval.

## Publications

### 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 '21

D3Net: A Speaker-Listener Architecture for Semi-supervised Dense Captioning and Visual Grounding in RGB-D Scans.  
*Dave Zhenyu Chen*, Qirui Wu, Matthias Nießner, Angel X. Chang

## Education

### Ph.D.

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

[2019 -]

### M.Sc.

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

[2016 - 2018]

### B.Eng.

University of Electronic Science and Technology of China (UESTC), China  
Major: Computer Science; GPA: 3.75/4.00 (Top 10%)  
Thesis: Automatic Image Annotation via Sparse Encoding

[2012 - 2016]

## Research Experience

### 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 2022, ICRA 2022, IJCV 2021.

### Workshops

#### Organizer

1<sup>st</sup> Language for 3D Scenes Workshop, CVPR 2021

## Teaching

### Teaching Assistant

Advanced Deep Learning for Computer Vision, 2019-2021, TUM  
Practical Course: Big Data Science, 2018, LMU

## Skills

### Programming

Python, JavaScript, C/C++, Java, Shell, HTML,  
L<sup>A</sup>T<sub>E</sub>X

### Tools

PyTorch, TensorFlow, OpenCV, Blender

### Language

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

## References

### Prof. Dr. Matthias Nießner

Professor, CS, TUM  
niessner@tum.de  
<http://www.niessnerlab.org/index.html>

### Prof. Dr. Angel X. Chang

Assistant Professor, CS, Simon Fraser University  
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<https://angelxuanchang.github.io/>

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