

# Diandian Guo (郭典典)

University of Stuttgart

✉ guodiandian1998@gmail.com | 📅 December 1st, 1998 | 🌐 github.com/RascalGdd | 🏠 Diandian Guo

## Personal Profile

Ph.D. student in CUHK. Currently, I am working on AI medical AR/XR related topics. Feel free to contact me if you are interested in my work.

## Education

### The Chinese University of Hong Kong

New Territories, Hong Kong

Ph.D. student in Computer Science and Engineering

Aug 2024 - now

- AI/XR for medical and scientific applications
- Medical imaging
- Supervisor: Prof. Pheng-Ann Heng

### University of Stuttgart

Stuttgart, Germany

MSc in Electromobility

Nov 2020 - Sept 2023

- Average Note: 1.5
- **Related Courses:** Deep learning(1.0), Detection and Pattern Recognition(1.0), Computer Vision(1.3), and Machine Learning(1.0), etc.

### Jilin University

Jilin, China

BSc in Vehicle Engineering

Sept 2016 - June 2020

- Graduated with Distinction (90/100)
- Got the top award of scholarship for 3 times, second award for 1 time

## Project Experience

### Unpaired Semantic Image Synthesis in Autonomous Driving Datasets

Stuttgart, Germany

Author list: George Eskandar\*, **Diandian Guo\***, Karim Guirguis, Bin Yang

Apr 2022 - Feb 2023

- **Publication:** Towards Pragmatic Semantic Image Synthesis for Urban Scenes, **IEEE Intelligent Vehicles Symposium (IV) 2023, Best student paper award**
- Optimized the discriminator of the GAN(ProjectedGAN discriminator, patch discriminator, EPE discriminator, etc.)
- Designed the additional decoder to reconstruct the image with U-net in pixel and wavelet domain, achieved the best mIoU
- Implementation of the discriminator to correct the semantic mismatch problem when we use GTA5 label maps to generate cityscapes images

### Semi-Supervised Label-to-Image Translation

Stuttgart, Germany

Author list: George Eskandar, Shuai Zhang, Mohamed Abdel, Mark Youssef, **Diandian Guo**, Bin Yang

Apr 2022 - Feb 2023

- **Publication:** A Semi-Paired Approach For Label-to-Image Translation, **ICIP 2023**
- Implemented some baselines to test the mIoU and FID metric

### Vanishing-Point-Guided Video Semantic Segmentation of Driving Scenes

ETH, Switzerland

Author list: **Diandian Guo**, Deng-Ping Fan, Tongyu Lu, Christos Sakaridis, Luc Van Gool

Mar 2023 - Nov 2023

- **Publication:** Vanishing-Point-Guided Video Semantic Segmentation of Driving Scenes, **CVPR 2024 Highlight**
- Did a survey on VSS (video semantic segmentation)
- Designed and implemented an efficient framework which exploits the vanishing point priors
- Paper writing and revision

## Scene Graph Generation in Operating Rooms

CUHK, Hong Kong

Author list: Jialun Pei\*, **Diandian Guo\***, Jingyang Zhang, Manxi Lin, Yueming Jin, Pheng-Ann Heng

May 2023 - Nov 2023

- **Publication:**  $S^2$ Former-OR: Single-stage Bimodal Transformer for Scene Graph Generation in OR, **TMI 2024**
- Designed modules for multi-view fusion and point-cloud fusion
- Implemented the whole framework under the guidance of Dr. Jialun Pei
- Tested Recall and Precision on some baseline methods including SGTR, STIP, and RelTR
- Paper writing of the Experiments section

## Multi-modal Scene Graph Generation in Operating Rooms

CUHK, Hong Kong

Author list: **Diandian Guo\***, Manxi Lin\*, Jialun Pei, He Tang, Yueming Jin, Pheng-Ann Heng

Dec 2023 - Mar 2024

- **Publication:** Tri-modal Confluence with Temporal Dynamics for Scene Graph Generation in Operating Rooms, **MICCAI 2024**
- Designed ViewTemp for scale-adaptive multi-view temporal 2D integration
- Designed the knowledge transfer from medical LLMs to alleviate the class-imbalance problem
- Paper writing and revision

## Working Experience

---

### Internship for Computer Vision Engineer

Stuttgart, Germany

in Robert Bosch GmbH

Apr 2022 - Feb 2023

- Lane detection for automated driving

### Master Thesis Student

Zürich, Switzerland

at ETH Zürich

Mar 2023 - Nov 2023

- Funded by Toyota Motor Europe via the research project TRACE-Zürich
- Supervised by Prof. Luc Van Gool

### Research Assistant

CUHK, Hong Kong

at The Chinese University of Hong Kong

Mar 2024 - Aug 2024

- Medical image analysis
- Supervised by Prof. Pheng-Ann Heng

## Languages

---

**Mandarin** Native

**English** Fluent

**German** Intermediate