

# YUANZHI ZHU

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Homepage: <https://yuanzhi-zhu.github.io/about/>

## EDUCATION BACKGROUND

- 10/2020-10/2023 **Swiss Federal Institute of Technology (ETH Zurich)**, Zurich, Switzerland
- Master in **Electrical Engineering and Information Technology**
  - GPA: 5.616/6.0
- 10/2019-04/2020 **Technical University of Munich (TUM)**, Munich, Germany
- Exchange Program in **Electrical and Computer Engineering**
  - GPA: 4.0/4.0 (1.0/1.0)
- 09/2016-06/2020 **Beihang University (BUAA)**, Beijing, China
- Bachelor of Engineering in **Electrical Engineering**
  - GPA: 3.762/4.0 (90.73/100)

**RESEARCH INTERESTS** **Computer Vision and Generative Models:** Diffusion Models; Inverse Problems; Text-to-3D Generation; Generalization of Generative Models

## PUBLICATIONS

- [1] **Yuanzhi Zhu**, Kai Zhang, Jingyun Liang, Jiezhong Cao, Bihan Wen, Radu Timofte, Luc Van Gool. [Denoising Diffusion Models for Plug-and-Play Image Restoration](#), *CVPRW* (2023) (25+ citations & 200+ [GitHub](#) stars)
- [2] Jun Ma, **Yuanzhi Zhu**, Chenyu You, Bo Wang. [Pre-trained Diffusion Models for Plug-and-Play Medical Image Enhancement](#), *MICCAI* (2023)
- [3] Zixiang Zhao, Haowen Bai, **Yuanzhi Zhu**, Jianshe Zhang, Shuang Xu, Yulun Zhang, Kai Zhang, Deyu Meng, Radu Timofte, Luc Van Gool. [DDFM: Denoising Diffusion Model for Multi-Modality Image Fusion](#), *ICCV oral* (2023)
- [4] Zhizhong Zhang\*, **Yuanzhi Zhu**\*, Yue Zhang, Weisheng Zhao, et al. [Skyrmion-based Ultra-low Power Electric-field-controlled Reconfigurable \(SUPER\) Logic Gate](#), *IEEE Electron Device Letters* (Published as cover in 2019) (\* These authors contributed equally to this work)
- [5] Hayato Mizuno, Hironari Isshiki, Kouta Kondou, **Yuanzhi Zhu**, and Yoshichika Otani. [Influence of Planar Hall Effect on the Output signal in a T-shaped Spin Conversion Device](#), *Appl. Phys. Lett.* 119, 092401 (2021)

## RESEARCH EXPERIENCES

- 03/2023-10/2023 **Text-driven NeRF Editing with Diffusion Models (5.75/6)**, *Supervisor: Prof. [Siyu Tang](#); Master's Thesis Advisor: Dr. [Anpei Chen](#)*  
*VLG, ETH Zurich*
- Investigate NeRF generation/editing framework that bypasses the need for extensive 3D data and instead utilizes 2D generative prior
  - Study algorithms such as Score Distillation Sampling (SDS) and Variational Score Distillation (VSD) and build [Github](#) repository that can help understand of SDS & VSD (100+ stars)
- 05/2022-02/2023 **Denoising Diffusion Models for Plug-and-Play Image Restoration (5.75/6)**, *Supervisor: Prof. [Luc Van Gool](#); Advisor: Dr. [Kai Zhang](#), [Jingyun Liang](#), [Jiezhong Cao](#)*  
*Semester Project CVL, ETH Zurich*
- Investigate general image restoration tasks with score-based diffusion models
  - Combine the diffusion sampling algorithm (e.g. DDIM) with Half-Quadratic Splitting (HQS) algorithm for conditional generation with less than 100 sampling steps
  - Image restoration with details for severely ill-posed image restoration tasks, including image inpainting, image deblurring and super resolution

## SELECTED HONORS & AWARDS

- 11/2018,11/2019 Academic Competition Scholarship, Beihang University (Twice)  
11/2018,11/2019 Academic Excellence Scholarship, Beihang University (Twice)  
02/2018 Meritorious Winner in The Mathematical Contest in Modeling  
09/2017, 09/2018 Second Prize in China Undergraduate Mathematical Contest in Model (Twice)  
10/2017 First-Class Scholarship, Beihang University

**LANGUAGE PROFICIENCY** Chinese (Native); English (C1)