Tianhang Wang

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Profile

I graduated with a Bachelor's degree in Information Engineering from Zhejiang University (2020-2024), where I was a member of the prestigious Shannon Advanced Class (one of 30 selected out of 340). During my undergraduate studies, I interned at the Intelligent Communication Network and Security Institute, working on a research project focused on Deep Learning Enabled Semantic Covert Communication Design. Currently, I am pursuing a PhD at Zhejiang University, with a joint training program in collaboration with the Shanghai Innovation Institute (SII).

Education

B. E. Information Engineering *Zhejiang University*   **Hangzhou, China** *09/2020 - 06/2024*
GPA: 3.99/4.00 (3/145)
M. E. Information and Communication Engineering *Zhejiang University*   **Hangzhou, China** *09/2024 - 06/2025*
GPA: 3.98/4.00
Ph. D. Information and Communication Engineering *ZJU & SII*   **Shanghai, China** *09/2025 - Present*
GPA: N/A

Research Projects

- **Deep Learning Enabled Semantic Covert Communication Design**   2022.3–2023.6

  Studied semantic covert transmission under eavesdropping threats. Modeled detection as a binary hypothesis test and proposed power and sequence control strategies to enhance physical-layer security.

- **Development of a Communication System Based on SC-FDE**   2023.9–2024.3

  Designed frame structure and arrival detection modules for reliable single-carrier frequency-domain equalization (SC-FDE) communication systems.

- **Beamforming Optimization for Covert Integrated Sensing and Communication (ISAC) System** 2024.5–2025.5

  Developed an alternating optimization framework for hybrid analog–digital beamforming in covert ISAC systems, employing a Riemannian Augmented Lagrangian method to mitigate power leakage.

- **Design of a Coarse-to-Fine 1D Image Tokenizer for Native Multimodal Large Models**   2025.8–Present

  Exploring efficient image tokenization strategies for native multimodal large language models. Existing 2D tokenizers often introduce raster-order bias, limiting autoregressive modeling capabilities, while current 1D tokenizers lack fine-grained understanding and reconstruction performance. This work aims to design a novel 1D tokenizer with a natural coarse-to-fine image decomposition and integrated high-level semantic encoding, enabling more expressive and autoregressively compatible visual representations.

Selected Honors

- **National Scholarship (Top 1%)**, 2022, China

- **Dahua Remarkable Student Scholarship (Top 1%)**, 2022, Dahua

- **Outstanding Graduate of Zhejiang Province (Top 5%)**, 2024, Zhejiang Provincial Department of Education

- **Outstanding Graduate of Zhejiang University**, 2024, Zhejiang University

- **Zhejiang University First Prize Scholarship Award**, 2022, Zhejiang University

- **Yongping Scholarship**, 2023, Zhejiang University & Yongping Duan

Languages

- **English** CET6:550