

# Chao Tan

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 in Chaotan    🎓 Google Scholar    🔄 willytrek

## Profile

Master's student at KAIST with a strong publication record in computational imaging. My current research focuses on developing advanced algorithms and optical systems—including Fourier ptychography and diffraction tomography—to solve challenging 3D imaging problems. I am seeking a Ph.D. position to pioneer next-generation computational imaging techniques for industrial and biomedical applications.

## Education

**Korea Advanced Institute of Science and Technology** Sept 2024 – Jun 2026  
*Master of Science in Bio and Brain Engineering* (Expected)

- **Advisor:** Prof. [Mooseok Jang](#) [🔗](#)
- **GPA:** 3.66 / 4.3
- **Selected Courses:** Computational Biomedical Optics, Machine Learning for 3D Data, Interactive Computer Graphics

**Sichuan University** Sept 2020 – Jun 2024  
*Bachelor of Engineering in Optoelectronic Information Science and Engineering*

- **GPA:** 3.61 / 4.0 (Compulsory Courses: 3.68 / 4.0)

## Selected Awards

KAIST Scholarship 2024 - 2026  
 First Prize for Outstanding Undergraduate Thesis 2024

- **Thesis:** Research on Computer-generated Holography and Fourier Ptychographic Microscopy Based on Diffraction Calculation
- **Recognition:** Ranked among the top 3 theses in the College of Electronics and Information Engineering, Sichuan University.

## Publications

- [1] N. Chen, Y. Wu, [Chao Tan](#), L. Cao, J. Wang, and E. Y. Lam, "Uncertainty-aware Fourier ptychography," *Light: Sci. Appl.*, **14**(1), 236 (2025). [🔗](#)
- [2] F. Xu, Z. Wu, [Chao Tan](#), Y. Liao, Z. Wang, K. Chen, and A. Pan, "Fourier ptychographic microscopy 10 years on: a review," *Cells*, **13**(4), 324 (2024). [🔗](#)
- [3] [Chao Tan](#), J. Wang, Y. Wu, J. Zhou, and N. Chen, "Fast scaled cylindrical holography based on scaled convolution," *Displays*, **81**, 102619 (2024). [🔗](#)
- [4] W. Zhang, J. Wang, [Chao Tan](#), Y. Wu, Y. Zhang, and N. Chen, "Large field-of-view holographic Maxwellian display based on spherical crown diffraction," *Opt. Express*, **31**(14), 22660–22670 (2023). [🔗](#)

## Experience

**Research Assistant: Computational Microscopical Imaging** *Daejeon, Korea*  
*Moo Research Group, KAIST* *Aug 2024 – Present*

- Advanced research on 3D computational imaging by implementing and comparing algorithms for intensity diffraction tomography (IDT) and Fourier ptychographic tomography (FPT).
- Independently designed and built an off-axis holographic microscope.

**Research Intern: Computational Microscopical Imaging** *Chengdu, China*  
*Information Display Institute, Sichuan University* *Feb 2024 – Jun 2024*

- Constructed a Fourier ptychography microscopy (FPM) platform from the ground up, enabling high-

resolution, wide field-of-view imaging experiments.

- Contributed to the development of a novel differentiable reconstruction framework for FPM, which automated parameter tuning and improved reconstruction fidelity.

**Research Intern: Computational Microscopical Imaging**

*Xi'an, China*

*Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences*

*Jul 2023 – Jan 2024*

- Authored the 3D imaging section of a comprehensive review on Fourier ptychography.

**Research Intern: Computer-generated Holograms**

*Chengdu, China*

*Information Display Institute, Sichuan University*

*Jul 2022 – Jul 2023*

- Proposed a fast calculation algorithm for scaled cylindrical holography using scaled diffraction in Python.

## **Skills**

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**Languages:** English – Fluent (IELTS 6.5, July 2023), Mandarin – Native speaker

**Programming Languages:** Python, Matlab, LaTeX

**Software & Tools:** Zemax, SolidWorks, Blender

**Hardware:** Raspberry Pi