

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 <i>Master of Science in Bio and Brain Engineering</i>	Sept 2024 – Jun 2026 (Expected)
<ul style="list-style-type: none"> ◦ Advisor: Prof. Mooseok Jang 🔗 ◦ GPA: 3.66 / 4.3 ◦ Selected Courses: Computational Biomedical Optics, Machine Learning for 3D Data, Interactive Computer Graphics 	
Sichuan University <i>Bachelor of Engineering in Optoelectronic Information Science and Engineering</i>	Sept 2020 – Jun 2024
<ul style="list-style-type: none"> ◦ GPA: 3.61 / 4.0 	(Compulsory Courses: 3.68 / 4.0)

Selected Awards

KAIST Scholarship	2024 - 2026
First Prize for Outstanding Undergraduate Thesis	2024
<ul style="list-style-type: none"> ◦ 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 <i>Mooo Research Group, KAIST</i>	<i>Daejeon, Korea</i> <i>Aug 2024 – Present</i>
<ul style="list-style-type: none"> ◦ 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 <i>Information Display Institute, Sichuan University</i>	<i>Chengdu, China</i> <i>Feb 2024 – Jun 2024</i>
<ul style="list-style-type: none"> ◦ 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

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

Programming Languages: Python, Matlab, LaTeX

Software & Tools: Zemax, SolidWorks, Blender

Hardware: Raspberry Pi