

# **Qixuan Min**

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## **RESEARCH INTERESTS**

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Metasurface, Computational Imaging, Phase-space Optics, Structured Light.

## **EDUCATION**

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<b>University of Chinese Academy of Sciences, SIOM</b> , Shanghai, China	Sep 2021 — July 2024
Master of Science	GPA: 3.7/4.0
Thesis Title: The Study of Quantitative Phase Imaging Based on Polarization-Multiplexed Metasurface	Mark: 95/100
Thesis Advisor: Prof. Guohai Situ	
<b>Shanghai Maritime University</b> , Shanghai, China	Sep 2017 — July 2021
Bachelor of Automation(Outstanding Graduates)	GPA: 3.3/4.0 Rank(Top5.6%)

## **PUBLICATIONS**

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### **Journal paper**

- **Min, Q.**, Trapp, J., Fang, T., Hu, R., Wang, F., Zhang, Z., Liu, X., Dai, A., Yang, C., Guo, J. and Situ, G., 2024. Varifocal Metalens for Compact and Accurate Quantitative Phase Imaging. **ACS Photonics**, 11(7), 2797-2804.
- Hu, R., **Min, Q.**, Liu, X., Dai, A., Guo, J. and Situ, G. 2024. Terahertz programmable metasurface for phase modulation based on free carrier plasma dispersion effect. **Applied Physics Letters**, 124(25), 251703.
- Dai, A., Fang, P., Gao, J., **Min, Q.**, Hu, R., Qiu, S., Wu, X., Guo, J. and Situ, G., 2023. Multifunctional Metasurfaces Enabled by Multifold Geometric Phase Interference. **Nano Letters**, 23(11), 5019-5026.
- Zhang, Z., Wang, F., **Min, Q.**, Jin, Y. and Situ, G., 2024. Fourier phase retrieval using physics-enhanced deep learning, **Optics Letters**, 49(21), 6129-6132.
- Zhang, N., Wang, F., **Min, Q.**, Liu, X., Yuan, H., Guo, J. and Situ, G., 2025. Broadband and polarization-independent complex amplitude modulation using a single layer dielectric metasurface. **Nanoscale**, 17(15), pp.9562-9568.
- Zhang, N., **Min, Q.**, Liu, X., Yuan, H., Liu, H., Huang, Z., Zhao, X., Guo, J. and Situ, G., 2025. SiM-SHDR: Single-Layer Metasurface for Snapshot High Dynamic Range Imaging, **Photonics Research**, Accepted.

### **Conference**

- **Min, Q.**, Guo, J. and Situ, G. 2024 Compact Quantitative Phase Imaging Based on a Polarization-Dependent Varifocal Metalens. **Optica Digital Holography and Three-Dimensional Imaging. 2024. Italy (Oral Presentation)**

## **RESEARCH EXPERIENCE**

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<b>Polarization-dependent varifocal metalens for quantitative phase imaging</b>	Sep 2022 — June 2024
The aim of this project is to design a highly integrated and high-precision quantitative phase imaging device based on a polarization-dependent varifocal metalens.	

- Proposed a compact quantitative phase imaging method using polarization-dependent varifocal metalens.
- Designed and simulated the varifocal metalens.
- Performed quantitative phase imaging experiments and wrote the manuscript.
- Made an oral presentation in Optica DH2024.

<b>Terahertz programmable metasurface</b>	Dec 2021 — Jan 2024
The goal of this project is to design a high-speed, high-efficiency reconfigurable metasurface based on an MIM structure.	

- Carried out simulations of the PN junction and analyzed the data.

<b>Multifold geometric phase metasurfaces based on interference effect</b>	Sep 2021 — Aug 2022
The aim of this project is to design a complex amplitude modulation geometric phase metasurface using the interference coupling effect between multiple meta-atoms.	

- Conducted experiments on spin-decoupled metalens imaging.

<b>Intelligent chess gaming robot</b>	Sep 2018 — Aug 2019
The aim of this project is to design and build a intelligent game-playing robot that can pick and place pieces on a chessboard and make intelligent decisions based on the state of the game.	

- Processed the captured images.
- Programmed control algorithm strategy.
- Designed the PCB and the mechanical structures.

#### Auto-tracing electromagnetic Cannon

July 2019 — Sep 2019

The competition's task is to design and build an electromagnetic cannon within three days that can track a specific object and fire a projectile to hit the target. The score is determined by the accuracy of the hits.

- Designed the circuit for the tracking device.
- Developed a computer program for the purpose of recognizing objects.
- Developed a computer program to control the gimbal, enabling the tracking of objects.

## AWARDS

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#### Entrepreneurial Pioneer Award

The award is given to those teachers and students who are brave in entrepreneurship.

Hangzhou, China

Nov 2021

#### Outstanding Freshmen Scholarship

The award is given to the outstanding new students of the University of the Chinese Academy of Sciences.

Hangzhou, China

Sep 2021

#### Outstanding Graduates

The award is given to the most outstanding undergraduate graduates, equivalent to a first-class honors degree.

Shanghai, China

June 2021

#### First Price in Texas Instruments Cup Undergraduate Electronics Design Contest

Shanghai, China

A nationwide undergraduate student competition with high prestige, featuring over 20,000 participants and less than 300 first-place winners, a ratio of 2%.

Sep 2019

#### Second Price in NXP Semiconductors Cup National Undergraduate Smart Car Contest

Shanghai, China

A nationwide undergraduate student competition with high prestige, where only a very few teams can advance to the finals and win national awards.

Aug 2019

#### Third Price in National Undergraduate Engineering Training Integration Ability Competition

Shanghai, China

A nationwide undergraduate student competition with high prestige, where only a very few teams can advance to the finals and win national awards.

May 2019

## SKILLS

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- **Programming:** Python, C, C++, Matlab
- **Software:** Linux, Lumerical, CST, COMSOL, Altium Designer, Solidworks, 3Ds Max, Fusion 360, Git and so on.

## REFERENCES

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#### Prof. Guohai Situ

Professor, Director at Shanghai Institute of Laser Technology, Shanghai, China

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Scholar Profiles: University of Chinese Academy of Sciences - Personal Page — Google Scholar

#### Prof. Shensheng Han

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#### Prof. Hong Yu

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