# Jin Yan

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## EDUCATION

**Huazhong University of Science and Technology** Wuhan, China
B.S. in Opto-electronic Information Science and Engineering June 2024 (expected)
GPA 3.66/4
TOFEL: 99

## RESEARCH EXPERIENCE

**Huazhong University of Science and Technology** Wuhan, China
**Metalens-based Optical Multiparameter Detection** **Supervisor: Prof. Zhenyu Yang**
Research Assistant in Prof. Zhenyu Yang's Group September 2022 – January 2023

- **Description:** Designed metalens to reconstruct the Stokes parametrization of light based on PB phase modulation, Hartmann-shack wavefront detection principle. The incident light intensity was detected by 4~6 different polarization-sensitive lenses to reconstruct the Stokes parameter of the incident light.
- **Tools:** Lumerical FDTD solutions, MATLAB, Python.
- **Accomplishments:** Completed a research presentation

**Huazhong University of Science and Technology** Wuhan, China
**End-to-end Metalens Inverse Design for Multi-channel Single-shot Imaging**
Research Assistant in Prof. Zhenyu Yang's Group February 2023 – Present

- **Description:** Proposed end-to-end inverse hypersurface design for optical multichannel imaging combined with Tikhonov reconstruction back-end algorithm. The depth of field, polarization state, spectral and spatial information of a single frame of incident light is obtained using grayscale information.
- **Tools:** MATLAB,Python
- **Accomplishments:** manuscript in preparation

**Massachusetts Institute of Technology** Remote
**Blended Learning, Atom Simulation** January 2023 – Present

- **Description:** Used machine learning algorithms to predict the Eb of 2D materials with wide band gap (>3 eV) from simple physical descriptors.
- **Tools:** Python, MATLAB
- **Accomplishments:** manuscript in preparation

## PUBLICATIONS

- Z. Duan*, H. Wu*, Y. Luo* and **J. Yan***, "Research on the Best Riding Strategy," 2022 IEEE Conference on Telecommunications, Optics and Computer Science (TOCS), Dalian, China, 2022, pp. 1053-1058, doi: 10.1109/TOCS56154.2022.10016007.

## PROJECTS

**Assembly Language Programming** February 2022 – July 2022

- Used Keil to program the 8051 microcontroller, enabling the microcontroller to count, display names, and play music.

**3D Model Design & Printing** September 2022 – November 2022

- Designed a model of the school's history gallery using FreeCAD and printed the model using a 3D printer.

**International Day of Light Science Roadshow** 16th May 2022

- Organized a class-to-class International Day of Light awareness campaign. Made naked-eye holograms on site, brought optical devices such as infrared sensors, and popularized basic optical knowledge to passersby.

## OTHER LEARNING EXPERIENCE

- Quantum Computing Algorithms for Cybersecurity, Chemistry, and Optimization, Massachusetts Institute of Technology Online

Online courses on Coursera:

- Supervised Machine Learning: Regression and Classification, Stanford Online
- Advanced Learning Algorithms, Stanford Online
- Unsupervised Learning, Recommenders, Reinforcement Learning, Stanford Online

## HONORS & AWARDS

Outstanding Student Leader Pioneer 2022
MCM/ICM Honorable Mention 2022

## GRANTS & FELLOWSHIPS

Science & Technology Innovation Scholarship (Top 5% in 600 students) 2022
Scholarship for academic excellence (Top 5% in 600 students) 2021