

# Jiayu Yang

UNDERGRADUATE

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## Education

### Peking University

B.Sc. IN PHYSICS

Beijing, P.R.China

2018 Sep - 2022 Jul (Expected)

- GPA: 3.918/4.0    Ranking: 3/138
- Related courses and grades:
  - Group Theory (Graduate Course)    99/100
  - Advanced Quantum Mechanics (Graduate Course)    97/100
  - Quantum Statistical Physics (Graduate Course)    95/100
  - Electrodynamics    99/100
  - Methods of Mathematical Physics (2)    98/100
  - Modern Physics Laboratory I    93/100
  - Seminar for Quantum Mechanics    95/100

## Research Experience

### Institute of Modern Optics, School of Physics, Peking University

UNDERGRADUATE STUDENT, DIRECTED BY PROF. XIAOYONG HU

Beijing, P.R.China

2019 Jul - Now

Individual research:

- Realized the conversion of circularly polarized light with two on-chip silicon waveguides based on EP-encirclement in a four-dimensional system. (The publication is in preparation.)
- Constructed an exceptional point in a photonic crystal waveguide with gain and loss.

Team collaboration:

- Participated in writing a review on the all-optical switch: I finished the part of PT-symmetry and exceptional points independently.
- Participated in the inverse design of basic devices in all-optical binary computation.

### Centre for Advanced Photonics and Electronics, University of Cambridge

STUDENT VISITOR, DIRECTED BY PROF. DAPING CHU

Cambridge, United Kingdom

2021 Jul - Now

- Designed a new type of photonic crystal waveguide with liquid crystal on silicon, and realized optical switch and wavelength division multiplexing based on the structure.
- Fabricated the Bragg Gratings experimentally and measured its transmission spectrum.

## Publications

- H. Qi, X. Wang, X. Hu, Z. Du, **J. Yang**, Z. Yu, Shaoqi Ding, S. Chu, and Q. Gong, *All-optical switch based on novel physics effects*, Journal of Applied Physics 129, 210906 (2021).  
<https://doi.org/10.1063/5.0048878>
- H. Qi, Z. Du, **J. Yang**, X. Hu and Q. Gong, *All-optical binary computation based on inverse design method*, Nanophotonics, 000010151520210467 (2021).  
<https://doi.org/10.1515/nanoph-2021-0467>
- H. Qi, Z. Du, X. Hu, **J. Yang**, S. Chu and Q. Gong, *High Performance Integrated Photonic Circuit Based on Inverse Design Method*, Opto-Electronic Advances, Accepted on 22-Sep-2021 (2021).

## Extracurricular Activities

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### Undergraduate enrollment for Peking University

STUDENT VOLUNTEER AND LEADER OF A VOLUNTEER GROUP IN SHAANXI

- Enrollment counselor for high school students.
- Trained new members in our group.

*Beijing, P.R.China*

*2019 Jun - Now*

### The Student Union in School of Physics

SECRETARY

- One of the directors of the New Year's Party and the Welcome Party.
- Organized several students activities in School of Physics.
- Trained new members of the department in the Student Union.

*Beijing, P.R.China*

*2019 Sep - 2020 Jun*

### Track Team in Peking University

ATHLETE IN 100M

- Personal Best: 11.32s.
- Organized training for all team members.

*Beijing, P.R.China*

*2019 Sep - Now*

## Additional Information

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- Software: Skilled in COMSOL Multiphysics and Lumerical FDTD Solutions.
- Programming: Skilled in Python, C and Matlab.
- Language: TOEFL(2021 Aug) - R28 L26 S23 W25.

## Honors and Awards

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2021	China National Scholarship
2021	The National Southwest Associated University Scholarship
2021	Merit Student Pacesetter
2020	China National Scholarship
2020	Merit Student Pacesetter
2019	China National Scholarship
2019	Merit Student Pacesetter
2018	The First Prize of Freshman Scholarship · Mingde Scholarship