

# Kexin Wang

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## EDUCATION

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### Fudan University (FDU)

Sept 2017 - Present

- B.S., Physics (expected Jun 2021)
- GPA: **3.77**/4.0 · Rank: **5**/115
- Upper division (Junior year): **3.91**/4.0 · Rank: **3**/115
- Major courses: Solid Physics (A), Atomic Physics (Honors) (A), Low Temperature and Superconductivity (A), Electrodynamics (Honors) (A-)

### University of California, Berkeley

Jan 2019 - May 2019

- Exchange student sponsored by Fudan University
- GPA: **3.91**/4.0
- Major courses: Quantum Mechanics (A+), Introduction to Mathematical Physics (A+), Introduction to Statistical and Thermal Physics (A-)

## RESEARCH EXPERIENCE

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### ❖ Dynamics of phase-mismatched dipole spin waves in atomic medium

*Advisor: Prof. Saijun Wu, Department of Physics, Fudan University* Jan 2020 - Present

- Study on the radiation pattern and collective behaviors of atom arrays
- Introduced close-by atom pairs into the coupled dipole model, in order to explain the unexpected decay rate of phase-mismatched atoms

### ❖ UCLA-CSST program (canceled due to COVID-19)

May 2020 - Sept 2020

*Advisor: Prof. Wes Campbell, Department of Physics, University of California, Los Angeles*

- Transformed ultra-cold atoms and molecules to quantum simulators, in order to solve intractable supercomputer simulations

### ❖ Abnormal reflection of electromagnetic waves with metasurface

May 2019 - Jan 2020

*Advisor: Prof. Lei Zhou, Department of Physics, Fudan University*

- Induced abrupt phase addition, facilitated by artificial atoms or metasurface, in order to produce any reflection angle at will
- Simulated methods to achieve abnormal reflection by CST and Comsol, under the hypothesis that near field effects would boost the efficiency

### ❖ Preparation of graphene with zigzag edge by hydrogen plasma etching Feb 2019 - May 2019

*Advisor: Prof. Michael Crommie, Department of Physics, UC Berkeley*

- Exfoliation of 2D materials, including graphene and hexagonal boron nitride
- Vacuum annealing and Ar/H<sub>2</sub> annealing
- Introduced pits with zigzag edge on graphene by hydrogen plasma etching
- Conducted examinations and measurements under atom force microscopes (AFM)

❖ **Production of gratings with fine structures by lithography**

Aug 2018 - Jan 2019

*Advisor: Wei-Tao Liu, Professor, Department of Physics, Fudan University*

- Designed and set up the light path to produce fine gratings by optical lithography, for the use of sum-frequency vibrational spectroscopy

## SKILLS

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- Simulation: Comsol (Advanced), CST (Basic)
- Laboratory: AFM, exfoliation, annealing
- Programming: Python (Advanced), Matlab (Advanced), Mathematica (Advanced), IDL (Basic), Labview (Basic)

## HONOURS AND AWARDS

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- Chinese National Scholarship (2020, 2018)
- Member, *Junzheng Program* - scholarship for outstanding undergraduate research (2020)
  - Supported by the Chinese Undergraduate Research Endowment (CURE) and Zhengdao Li, Nobel Prize Winner in Physics
- Outstanding Project, *Venus Innovative Scientific Research Program* at Fudan (2017 - 2019)
  - Thesis: Optimal ingredients for up-conversion nanophosphors in bioimaging
  - Advisor: Wei Feng, Professor, Department of Chemistry, Fudan University
- Physics Honor Roll, Fudan University (2020, 2019)
- Silver Medal, 200-meter individual medley in the Chinese Swimming Competition for College Non-Athletes (2019)
- Honor Student, Fudan University (2018)

## STANDARDIZED TESTS

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- TOEFL: **109**/120 (Reading 29, Listening 29, Speaking 26, Writing 25)
- GRE: **330**/340 (Verbal 160, Quantitative 170, Writing 3.5)

## EXTRACURRICULAR ACTIVITIES

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- Vice Chairman, Swimming Association of Fudan University (2018 - Present)
- Member, *Siyuan Program* (2018 - Present)
  - Organized community and academic programming for cohort, with a focus on social responsibility and interdisciplinary collaboration.
  - Secured sponsorship from Acorn Campus Ventures and Suma Ventures
- Volunteer Physics Tutor - over 50 service hours during COVID-19 pandemic (Feb - Jun 2020)
- Cohort Representative, Department of Physics in Fudan University (2018 - 2019)
- Director of Academic Affairs, Physics Society in Fudan University (2018 Autumn Semester)