

# Shenyang Shi

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- ACADEMIC BACKGROUND**
- [Columbia University in the City of New York](#) New York, NY  
*Ph.D. student, Physics* 2020-2025
    - Experimental particle physics on dark matter direct detection in [XENON collaboration](#) with Prof. [Elena Aprile](#).
    - Extensive quantitative data analysis, model building, and statistical inference on supercomputer clusters.
    - Team leader, working with over 120 scientists in the team on signal processing and reconstruction from 1000+TB of particle physics live data.
    - Coordinate research and deliver scientific results promptly.
    - Chair international meetings weekly.
  - [Fudan University](#) Shanghai  
*B.Sc., Physics* 2016-2020
    - Graduate with the highest honor, minor in economics.
    - Shanghai outstanding graduate.
    - Superconductivity physics with Prof. [Yuanbo Zhang](#).
  - [University of California, Los Angeles](#) Los Angeles, CA  
*Cross-Disciplinary Scholar in Science and Technology (CSST)* 2019
    - Quantum computing with atoms with Prof. [Wesley Campbell](#).
    - Built the finest laser stabilization system at UCLA.
  - [University of California, Berkeley](#) Berkeley, CA  
*Research* 2018
    - Femtosecond laser optics and low-dimensional semiconductor study with Prof. [Feng Wang](#).
    - Research work on magic-angle ultra fast quasi-particle published on [Nature](#).

## PUBLICATIONS [Google Scholar](#)

13. [Search for events in XENON1T associated with Gravitational Waves](#), *arXiv preprint arXiv:2306.11871*, June 2023
12. [Searching for Heavy Dark Matter near the Planck Mass with XENON1T](#), *Physical Review Letters*, June 2023
11. [Low-energy calibration of XENON1T with an internal 37 Ar source](#), *The European Physical Journal C*, June 2023
10. [Detector signal characterization with a Bayesian network in XENONnT](#), *Physical Review D*, April 2023
9. [First Dark Matter Search with Nuclear Recoils from the XENONnT Experiment](#), *Physical Review Letters*, March 2023
8. [A next-generation liquid xenon observatory for dark matter and neutrino physics](#), *Journal of Physics G: Nuclear and Particle Physics*, December 2022

7. [The Triggerless Data Acquisition System of the XENONnT Experiment](#), *arXiv preprint arXiv:2212.11032*, December 2022
6. [An approximate likelihood for nuclear recoil searches with XENON1T data](#), *The European Physical Journal C*, November 2022
5. [Search for new physics in electronic recoil data from XENONnT](#), *Physical Review Letters*, October 2022
4. [Effective Field Theory and Inelastic Dark Matter Results from XENON1T](#), *arXiv preprint arXiv:2210.07591*, October 2022
3. [Double-weak decays of Xe 124 and Xe 136 in the XENON1T and XENONnT experiments](#), *Physical Review C*, August 2023
2. [Emission of single and few electrons in XENON1T and limits on light dark matter](#), *Physical Review D*, July 2022
1. [Observation of moiré excitons in WSe<sub>2</sub>/WS<sub>2</sub> heterostructure superlattices](#), *Nature*, Mar 2019

## WORK AND LEADERSHIP

- [E. K. A. Advanced physics laboratory](#) 2021-Present  
Core advanced class on modern particle physics.
- [General physics lab](#) 2020-2021  
Lecturer of the undergraduate physics course.
- [Graduate advising committee](#) 2022-Present  
Student member of the faculty committee in the physics Ph.D. program at Columbia University, designing curriculum and education.
- [Fudan University physics society](#) 2017-2018  
President. Organize undergraduate extracurricular activities of physics research and education.

## CONFERENCE CONTRIBUTIONS

4. [The First WIMP results from XENONnT](#), *XVIII International Conference on Topics in Astroparticle and Underground Physics*, Vienna, Austria, August 2023
3. [The XENONnT Dark Matter Experiment](#), *Quarks to Cosmos*, Minneapolis, Minnesota, April 2023
2. [Neutron background in XENONnT](#), *APS April Meeting*, New York, April 2022
1. [To stabilize a laser: Pound-Drever-Hall method](#), *California NanoSystems Institute*, Los Angeles, CA, September 2019

## SPECIAL ACHIEVEMENTS

- *Shanghai outstanding graduate*, 2020
- *Hui-Chun Chin and Tsung-Dao Lee Chinese Undergraduate Research Endowment*, 2019
- *Samsung scholarship* (Top 3/100), 2018
- *HUAWEI scholarship* (Top 3/100), 2017
- *Silver, China Undergraduate Physicist Tournament*, 2017
- *Gold, Shanghai Undergraduate Physicist Tournament*, 2017