

Yunjia Bao

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Personal Information

Mailing Address Department of Physics,
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Citizenship China

Education Background

2020 – present **Brown University, Providence, RI, U.S.A.**, Master of Science in Physics.
Degree expected in May 2022

2016 – 2020 **Reed College, Portland, OR, U.S.A.**, Bachelor of Arts in Physics.
Degree conferred in May 2020
Thesis: Understanding Scattering Amplitudes with Spinor Helicity Formalism

Publications

- [1] Yunjia Bao and Andrew J. Larkoski. Calculating Pull for Non-singlet Jets. *J. High Energy Phys.*, 2019(12):035, December 2019. [arXiv:1910.02085](https://arxiv.org/abs/1910.02085), doi:10.1007/jhep12(2019)035.
- [2] Yunjia Bao, Ella Banyas, and Lucas Illing. Periodic and quasiperiodic dynamics of optoelectronic oscillators with narrow-band time-delayed feedback. *Phys. Rev. E*, 98(6), December 2018. doi:10.1103/PhysRevE.98.062207.

Professional Experience

Research Experience

Jun 2019 – Sep 2019 **Summer Research Fellow**, Department of Physics, Reed College, Portland, OR.

Principal investigator: Prof. Andrew Larkoski

- Research area: High-energy particle phenomenology
- Research title: Calculating Jet Pull for Non-singlet QCD Jets
- Funding source: 2019 Physics Summer Award (Department of Physics, Reed College)

May 2018 – Aug 2018 **Summer Research Fellow**, Department of Physics, Reed College, Portland, OR.

Principal investigator: Prof. Lucas Illing

- Research area: Nonlinear dynamics
- Research title:
 1. Periodic and Quasiperiodic Dynamics of Optoelectronic Oscillators with Narrowband Time-Delayed Feedback
 2. Amplitude Death in Time-Delayed Nonlinear Oscillator Networks
- Funding source: 2018 Delord-Mockett Award (Department of Physics, Reed College)

May 2017 – Aug 2017 **Summer Research Fellow**, *Department of Physics, Reed College*, Portland, OR.

Principal investigator: Prof. Lucas Illing

- Research area: Nonlinear dynamics
- Research title: Dynamics of Dual Delay Oscillators with Narrowband Feedback
- Funding source: 2017 Reed College Science Research Fellowship (Reed College)

Academic Support Experience

Jan 2020 – May 2020 **PHYS 442 Grader**, *Department of Physics, Reed College*, Portland, OR.

Supervisor: Prof. Joel Franklin

- Graded students' assignments for an advanced undergraduate course on quantum mechanics

Sep 2019 – Dec 2019 **PHYS 414 Grader**, *Department of Physics, Reed College*, Portland, OR.

Supervisor: Prof. Joel Franklin

- Graded students' assignments for a course on general relativity

Sep 2019 – May 2020 **Individual Peer Tutor**, *Office of Academic Support, Reed College*, Portland, OR.

Supervisor: Mr. Miguel Rodriguez

- Tutoring and providing academic supports for the following courses:
 - PHYS 311 (Classical Mechanics I)
 - PHYS 331 (Advanced Laboratory I)
 - PHYS 351 (Thermal Physics)
 - PHYS 202 (Modern Physics)
 - MATH 311 (Complex Analysis)
 - PHYS 322 (Electrodynamics II)
 - PHYS 323 (Optics)
 - PHYS 332 (Advanced Laboratory II)

Sep 2018 – May 2019 **PHYS 320 Grader**, *Department of Physics, Reed College*, Portland, OR.

Supervisors: Prof. Darrell Schroeter and Prof. Mark Beck

- Graded students' assignments for advanced undergraduate physics courses on electro-dynamics

Sep 2017 – May 2018 **PHYS 200 Grader**, *Department of Physics, Reed College*, Portland, OR.

Supervisors: Prof. Joel Franklin and Prof. Jenna Smith

- Graded students' assignments for intermediate undergraduate physics courses

Honors and Awards

- Research grant
- 2019 Physics Summer Award (Department of Physics, Reed College)
 - 2018 Delord-Mockett Award (Department of Physics, Reed College)
 - 2017 Reed College Science Research Fellowship (Reed College)

- Academic achievement
- Phi Beta Kappa
 - 2019-2020 President's Commendation for Excellence in Scholarship (Reed College)
 - 2018-2019 President's Commendation for Excellence in Scholarship (Reed College)
 - 2017-2018 President's Commendation for Excellence in Scholarship (Reed College)
 - 2016-2017 President's Commendation for Excellence in Scholarship (Reed College)

Skills

Software and Programming	○ Wolfram Language	advanced	○ Java	intermediate
	○ LabVIEW	advanced	○ MATLAB	beginner
	○ Python	intermediate	○ C++	beginner

Languages	<ul style="list-style-type: none"> Chinese: native language proficiency English: bilingual proficiency (near native) German: basic reading and communication French: basic reading and communication 	10+-year experience 1-year experience 1-year experience
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Contributed Presentations

- Apr 2020 American Physical Society April Meeting 2020 (Virtual): *Calculating Pull for Non-singlet QCD Jets*
- Oct 2019 Reed College Pre-Inauguration Student Showcase: *Waving a Red Rag to a Pull: Investigating an Observable in Particle Collision Experiments*
- Sep 2019 Reed College Physics Seminar: *Waving a Red Rag to a Pull: Investigating Jet Pull's Soft and Collinear Behavior in Three-jet Final States*
- Sep 2019 Reed College Summer Research Poster Session: *Waving a Red Rag to a Pull: Investigating an Observable in Particle Collision Experiments*
- Sep 2018 Reed College Physics Seminar: *Periodic and quasiperiodic dynamics of optoelectronic oscillators with narrow-band time-delayed feedback*
- Aug 2018 Reed College Summer Research Poster Session: *Amplitude death in directly coupled nonlinear oscillators*
- Aug 2018 Reed College Summer Research Poster Session: *Periodic and quasiperiodic dynamics of optoelectronic oscillators*
- Jun 2018 American Physical Society Northwest Section Annual Meeting: *Periodic and quasiperiodic dynamics of optoelectronic oscillators with narrow-band time-delayed feedback*
- Sep 2017 Reed College Physics Seminar: *Dynamics of delayed-feedback optoelectronic oscillators*
- Sep 2017 Reed College Summer Research Poster Session: *Dynamics of delayed-feedback optoelectronic oscillators*

Professional Memberships

American Physical Society