

# YIDI QI

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<https://yidiq7.github.io>

## EDUCATION

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**Northeastern University**

Ph.D. in Physics

*Advisor: Fabian Ruehle*

Boston, MA

*Sep. 2021 - Present (Expected 2026)*

**Stony Brook University**

M.A in Physics

*Advisor: Michael R. Douglas*

Stony Brook, NY

*Sep. 2018 - Sep. 2021*

**Jilin University**

B.S. in Physics

*Tang Aoqing Honors Program in Science*

Changchun, China

*Sep. 2014 - June 2018*

## PUBLICATIONS

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Authors are listed in alphabetical order

- [1] Yuanjie Ren, Jinzheng Li, and Yidi Qi. *MerLean: An Agentic Framework for Autoformalization in Quantum Computation*. 2026. arXiv: [2602.16554](https://arxiv.org/abs/2602.16554) [[cs.LO](#)].
- [2] Joanna Bieri, Giorgi Butbaia, Edgar Costa, Alyson Deines, Kyu-Hwan Lee, David Lowry-Duda, Thomas Oliver, Yidi Qi, and Tamara Veenstra. *Learning Fricke signs from Maass form Coefficients*. In press, *Advances in Theoretical and Mathematical Physics*. 2025. arXiv: [2501.02105](https://arxiv.org/abs/2501.02105) [[math.NT](#)].
- [3] Joanna Bieri, Giorgi Butbaia, Edgar Costa, Alyson Deines, Kyu-Hwan Lee, David Lowry-Duda, Thomas Oliver, Yidi Qi, and Tamara Veenstra. *Machine Learning the Vanishing Order of Rational L-functions*. In press, *Advances in Theoretical and Mathematical Physics*. 2025. arXiv: [2502.10360](https://arxiv.org/abs/2502.10360) [[math.NT](#)].
- [4] Michael R. Douglas, Daniel Platt, and Yidi Qi. *Harmonic 1-forms on real loci of Calabi-Yau manifolds*. Submitted to *Selecta Mathematica*, under review. 2024. arXiv: [2405.19402](https://arxiv.org/abs/2405.19402) [[math.DG](#)].
- [5] Michael Douglas, Subramanian Lakshminarasimhan, and Yidi Qi. “Numerical Calabi-Yau metrics from holomorphic networks”. In: *Proceedings of the 2nd Mathematical and Scientific Machine Learning Conference*. Vol. 145. Proceedings of Machine Learning Research. PMLR, Aug. 2022, pp. 223–252. arXiv: [2012.04797](https://arxiv.org/abs/2012.04797) [[hep-th](#)].

## EXPERIENCE

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**The NSF AI Institute for AI and Fundamental Interactions (IAIFI)**

*Junior Investigator*

Cambridge, MA

*Jan. 2023 - Present*

- Lead research at the intersection of AI, string theory and pure mathematics.

**Simons Center for Geometry and Physics**

*Research Assistant*

Stony Brook, NY

*May 2020 - Sep. 2021*

- Conducted foundational research on applying neural networks to problems in complex geometry.

**ATLAS Experiment at Stony Brook University and CERN**

*Research Assistant*

Geneva, Switzerland

*Sep. 2016 - May 2019*

- Performed statistical analysis and developed machine learning classifiers (BDT, NN) for signal-background separation on Large Hadron Collider data.

## RESEARCH VISITS

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<b>University of Cambridge, Department of Computer Science</b> <i>Visitor</i> <i>Host: Challenger Mishra</i>	Cambridge, UK <i>Sep. 2023 - Oct. 2023</i>
<b>King's College London, Department of Mathematics</b> <i>Visitor</i> <i>Host: Daniel Platt</i>	London, UK <i>Aug. 2023 - Sep. 2023</i>

## TALKS

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<b>String Data 2025</b> Searching for New Special Lagrangians with Quality-Diversity Optimization	University of Cambridge <i>Dec. 2025</i>
<b>String Phenomenology 2025</b> Searching for New Special Lagrangians with Quality-Diversity Optimization	Northeastern University <i>July 2025</i>
<b>String Data 2024</b> Harmonic 1-form on real loci of Calabi-Yau manifolds	YITP, Kyoto University <i>Dec. 2024</i>
<b>Forum for Young Scholars in Physics</b> An introduction to String theory and Artificial Intelligence	Jilin University <i>Dec. 2024</i>
<b>A Day of Deep Learning and High Energy Theory</b> Numerical Calabi-Yau and G2 Metrics from Neural Networks	Northeastern University <i>Mar. 2024</i>
<b>AI/Physics Journal Club</b> Solving PDEs on Higher Dimensional Manifolds with Neural Networks	Queen Mary University of London <i>Nov. 2023</i>
<b>ML@CL Ad-hoc Seminar Series</b> Solving PDEs on Higher Dimensional Manifolds with Neural Networks	University of Cambridge <i>Oct. 2023</i>
<b>Boston Area Chinese Young Physicists Seminar</b> Machine Learning and String Theory for Babies	Harvard University <i>Oct. 2022</i>
<b>Workshop on Machine Learning and Mathematical Conjecture</b> Tutorial on Machine Learning and Knot Theory	CMSA, Harvard University <i>Apr. 2022</i>
<b>Seminar Seires on String Phenomenology</b> Numerical Calabi-Yau Metrics from Holomorphic Networks	Online <i>Feb. 2021</i>

## TECHNICAL SKILLS

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<b>Programming Languages</b>	Python, C/C++, Fortran
<b>Machine Learning Frameworks</b>	TensorFlow, PyTorch, JAX
<b>Other Tools</b>	Linux (Bash), Git, Slurm, L <sup>A</sup> T <sub>E</sub> X, Mathematica

## PROFESSIONAL SERVICE

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Member of the IAIFI Summer School & Workshop Committee	<i>Fall 2023 - Present</i>
Co-organizer of the <a href="#">Chinese Young Physicists Seminar</a> in Boston area	<i>Fall 2021 - Present</i>
Co-organizer of the Computational Physics Seminar at Jilin University	<i>Fall 2017</i>

## TEACHING & MENTORING EXPERIENCE

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**LOGML Summer School 2024**

Calabi-Yau Metrics with  $U(1)$ -invariant Neural Networks

Imperial College London

*July 2024*

**Machine Learning in Mathematics & Theoretical Physics 2023**

Tutorial on Calabi-Yau Manifolds and Ricci-flat Metrics

University of Oxford

*July 2023*

**Northeastern University**

*Teaching Assistant*

- Excellence in Teaching Award, Physics Department
- *Classical Physics Lab*
- *Grader for Quantum Field Theory*

*Spring 2022*

**Stony Brook University**

*Teaching Assistant*

- Classical Physics Lab I, II
- Computation for Physics and Astronomy (C++, Fortran and Linux)