YIDI QI

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EDUCATION

Northeastern University — Boston, MA
Ph.D. in Physics — *Sep. 2021 - Present (Expected 2026)*
Advisor: Fabian Ruehle

Stony Brook University — Stony Brook, NY
M.A in Physics — *Sep.2018 - Sep. 2021*
Advisor: Michael R. Douglas

Jilin University — Changchun, China
B.S. in Physics — *Sep. 2014 - June 2018*
Tang Aoqing Honors Program in Science

PUBLICATIONS

Authors are listed in alphabetical order

[1] 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 [math.NT].

[2] 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 [math.NT].

[3] 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 [math.DG].

[4] 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 [hep-th].

EXPERIENCE

The NSF AI Institute for AI and Fundamental Interactions (IAIFI) — Cambridge, MA
Junior Investigator — *Jan. 2023 - Present*

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

Simons Center for Geometry and Physics — Stony Brook, NY
Research Assistant — *May 2020 - Sep. 2021*

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

ATLAS Experiment at Stony Brook University and CERN — Geneva, Switzerland
Research Assistant — *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

University of Cambridge, Department of Computer Science — Cambridge, UK
Visitor — *Sep. 2023 - Oct. 2023*
Host: Challenger Mishra

King's College London, Department of Mathematics — London, UK
Visitor — *Aug. 2023 - Sep. 2023*
Host: Daniel Platt

TALKS

String Phenomenology 2025 — Northeastern University
Searching for New Special Lagrangians with Quality-Diversity Optimization — *July 2025*

String Data 2024 — YITP, Kyoto University
Harmonic 1-form on real loci of Calabi-Yau manifolds — *Dec. 2024*

Forum for Young Scholars in Physics — Jilin University
An introduction to String theory and Artificial Intelligence — *Dec. 2024*

A Day of Deep Learning and High Energy Theory — Northeastern University
Numerical Calabi-Yau and G2 Metrics from Neural Networks — *Mar. 2024*

AI/Physics Journal Club — Queen Mary University of London
Solving PDEs on Higher Dimensional Manifolds with Neural Networks — *Nov. 2023*

ML@CL Ad-hoc Seminar Series — University of Cambridge
Solving PDEs on Higher Dimensional Manifolds with Neural Networks — *Oct. 2023*

Boston Area Chinese Young Physicists Seminar — Harvard University
Machine Learning and String Theory for Babies — *Oct. 2022*

Workshop on Machine Learning and Mathematical Conjecture — CMSA, Harvard University
Tutorial on Machine Learning and Knot Theory — *Apr. 2022*

Seminar Seires on String Phenomenology — Online
Numerical Calabi-Yau Metrics from Holomorphic Networks — *Feb. 2021*

TECHNICAL SKILLS

Programming Languages	Python, C/C++, Fortran
Machine Learning Frameworks	TensorFlow, PyTorch, JAX
Other Tools	Linux (Bash), Git, Slurm, LaTeX, Mathematica

PROFESSIONAL SERVICE

Member of the IAIFI Summer School & Workshop Committee — *Fall 2023 - Present*
Co-organizer of the Chinese Young Physicists Seminar in Boston area — *Fall 2021 - Present*
Co-organizer of the Computational Physics Seminar at Jilin University — *Fall 2017*

TEACHING & MENTORING EXPERIENCE

LOGML Summer School 2024 — Imperial College London
Calabi-Yau Metrics with $U(1)$-invariant Neural Networks — *July 2024*

Machine Learning in Mathematics & Theoretical Physics 2023 — University of Oxford
Tutorial on Calabi-Yau Manifolds and Ricci-flat Metrics — *July 2023*

Northeastern University
Teaching Assistant

· Excellence in Teaching Award, Physics Department *Spring 2022*
· *Classical Physics Lab*
· *Grader for Quantum Field Theory*

Stony Brook University
Teaching Assistant

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