

Boston University
Department of Mathematics and Statistics
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Employment

- Visiting Associate Scientist, Kavli IPMU at University of Tokyo, Aug 2013 -present
- Assistant Professor, Boston University, July 2012 -present
- Boas Assistant Professor, Northwestern University, Sep 2011- June 2012.

Education

- Harvard University, Cambridge, U.S.
Ph.D. in Mathematics, 2006-2011 (Thesis supervisor: Shing-Tung Yau)
- University of Science and Technology of China, Hefei, P. R. China
M.Phil. in Mathematics, 2003-2005. (Thesis supervisor: Sen Hu)
- University of Science and Technology of China, Hefei, P. R. China
B.Sc. in Mathematics, School of the Special Class for Gifted Young, 1999–2003.

Academic Interest

- Algebraic geometry and complex geometry: Calabi-Yau geometry, Singularity/Landau-Ginzburg theory, Moduli problem, Mirror symmetry.
- Quantum field theory and string theory: Renormalization theory, Non-linear sigma model, Topological string, Supersymmetric gauge theory.

Awards

- NSF Grant DMS-1361464 (Co-PI), Boston University/Keio University Workshops, April 1 2014- March 31 2017
- NSF Grant DMS-1309118 (PI), Geometric Aspects of Quantum Field Theory and Topological String, July 1 2013 - June 30 2016.
- New World Mathematics Awards: Golden Prize for Doctor Thesis Awards, 2012
- Harvard Merit Fellowship 2010-2011
- Harvard Salam Fellowship, 2008-2009
- USTC Outstanding Graduate Scholarship, 2003

Publications and Preprints

1. *On the B-twisted topological sigma model and Calabi-Yau geometry* (with Q. Li), preprint
2. *Mirror symmetry for unimodular exceptional singularities* (with C. Li, K. Saito and Y. Shen), preprint
3. *Primitive forms via polyvector fields* (with C. Li and K. Saito), arXiv:1311.1659 [math.AG]
4. *On the B-twisted quantum geometry of Calabi-Yau manifolds* (with Q. Li), Proceedings of the Sixth International Congress of Chinese Mathematicians 2013
5. *Variation of Hodge structures, Frobenius manifolds, and gauge theory*, arXiv:1303.2782 [math.QA]
6. *Renormalization and mirror symmetry*, SIGMA **8** (2012), 101
7. *BCOV theory on the elliptic curve and higher genus mirror symmetry*, arXiv:1112.4063 [math.QA]
8. *Feynman graph integrals and almost modular forms*, Commun. Number theory Phys, **6**, (2012)
9. *Quantum BCOV theory on Calabi-Yau manifolds and the higher genus B-model* (with K. Costello), arXiv:1201.4501 [math.QA]
10. *Calabi-Yau geometry and higher genus mirror symmetry*, PhD Thesis (2011), Harvard University.
11. *Picard-Fuchs Equations of Relative Periods and Abel-Jacobi Map for Calabi-Yau Hypersurfaces* (with B.H. Lian and S.T. Yau), Amer. J. Math, **134** (2012), no.5, 1345-1384
12. *Morphisms from Azumaya prestacks with a fundamental module to a projective variety: Topological D-strings as a master object for curves* (with C.H. Liu, R. Song and S.T. Yau), arXiv:0809.2121 [math.AG]
13. *On the spectrum of unitary finite-Euclidean graphs* (with L.A. Vinh), Ars Combin. **110** (2013), 275-287.
14. *Hamiltonian Formalism of the de-Sitter Invariant Special Relativity* (with M.L. Yan, N.C. Xiao and W. Huang), Commun. Theor. Phys. **48** :27-36, (2007)
15. *Baryonium with a phenomenological skyrmion-type potential* (with M.L. Yan, B. Wu and B.Q. Ma), Phys. Rev. D, **72** (2005) 034027

Services and Memberships

- Member of American Mathematical Society
- Reviewer for: Math Reviews of American Mathematical Society
- Referee for: Journal of Differential Geometry, Communications in Analysis and Geometry, Pure and Applied Mathematics Quarterly, Asian Journal of Mathematics
- Co-organizer for: Boston University Geometry and Physics Seminar
- Organizer for: Boston University Baby Quantum Field Theory Seminar

Invited Talks

- June 30-July 4, 2014: Geometry, Quantum Topology and Asymptotics, Confucius Institute of the University of Geneva, Switzerland
- June 8-15, 2014: Lecturer for Research Training Group 1670, University of Hamburg, Germany
- May 19-23, 2014: Representation Theory, Integrable Systems, and Quantum Fields, Northwestern University, USA
- April 1, 2014: Algebraic geometry seminar, Princeton, USA
- Mar 3-7, 2014: Workshop on B-model aspect of Gromov-Witten theory, University of Michigan
- Feb 10-14, 2014: Lecturer: Primitive forms and related subjects, Kavli IPMU, Japan
- Nov 25, 2013: Geometry and Physics seminar, University of Michigan, USA
- July 22, 2013: Invited seminar, Kavli IPMU, Japan
- July 16, 2013: The Sixth International Congress of Chinese Mathematicians, Taipei
- Apr 12-14, 2013: Mini-course for FRG Workshop on Gromov-Witten theory, Columbia University, USA
- Mar 11, 2013: Geometry and Physics seminar, University of Michigan, USA
- Jan 29, 2013: Differential geometry seminar, Harvard University, USA
- Nov 30, 2012: Everytopic Seminar, Brandeis University, USA
- Nov 27, 2012: GAP Seminar, Penn State University, USA
- Sep 14-17, 2012: Boston-Keio Summer Workshop on Geometry, Boston University, USA
- Aug 27, 2012: FRG Workshop: Generalized Geometry, String Theory, and Deformations, Harvard University, USA
- August 20-24, 2012: The Conference of Mirror Symmetry and Related Topics, KMUST, China
- July 27-Aug 20, 2012: Summer course, MSC at Tsinghua University, China
- August 10, 2012: Math Literature Seminar, MSC at Tsinghua University, China
- July 18, 2012: Workshop on the mathematical aspects of quantum field theory, USTC, China
- June 26, 2012: Geometry and Physics of the Landau-Ginzburg Model, IPMU, Japan
- June 18, 2012: Quantization and Mathematics: An Undergraduate Conference, Northwestern University, USA
- Mar 19, 2012: Geometry and Physics Seminar, University of Michigan, USA
- Feb 18, 2012: Hong Kong Geometry Colloquium, Hong Kong
- Feb 17,20, 2012: Geometry and Physics Seminar, HK Chinese Univ, Hong Kong
- Feb 8,11, 2012: Geometry Seminar, HKUST, Hong Kong
- Dec 9, 2011: Geometry Seminar, Boston University, USA
- Nov 3, 2011: Felix Klein Seminar, University of Notre Dame, USA
- Aug 3, 2011: Workshop on Chiral Differential Operators, Northwestern University, USA
- July 19, 2011: Seminar on QFT, MIT, US
- May 5, 2011: Mirror Symmetry Seminar, Simons Center for Geometry And Physics, Stonybrook
- Mar 4, 2011: Algebraic Geometry Seminar, University of Wisconsin, USA
- Feb 22, 2011: Differential Geometry Seminar, Harvard University, USA
- Oct 14, 2010: Geometry/Physics Seminar, Northwestern University, USA

- Sep 28, 2010: Differential Geometry Seminar, Harvard University, USA
- Dec 4 2009: Differential Geometry Seminar, Harvard University, USA
- Mar 12, 2009: Graduate Trivial Notion Seminar, Harvard University, USA
- Apr 24, 2008: Graduate Trivial Notion Seminar, Harvard University, USA

Teaching

- **Boston University**
 - Spring 2014: *Introduction to Algebraic geometry II*
 - Fall 2013: *Introduction to Lie group and Lie algebra*
 - Spring 2013: *Topics in geometry: Singularity theory*
 - Fall 2012: *Introduction to differential geometry*
- **Northwestern University**
 - Spring 2012: Instructor of Math 230, *Differential Calculus of Multivariable Functions*
 - Fall 2011: Instructor of Math 230, *Differential Calculus of Multivariable Functions*
- **Harvard University**
 - Spring 2011: Instructor of Math 1b, *Calculus II*
 - Fall 2010: Course assistant of Math 230a, *Differential Geometry*
 - Fall 2009: Instructor of Math 1b, *Calculus II*
 - Fall 2009: Course assistant of Math 114, *Analysis II: Measure, Integration and Banach Spaces*
 - Summer 2009: Course assistant of Math S-101, *An Introduction to Proof*
 - Fall 2008: Instructor of Math 1b, *Calculus II*
 - Fall 2007: Instructor of Math 1a, *Calculus I*
 - Summer 2007: Course assistant of Math S-310, *Graph theory*
- **University of Science and Technology of China**
 - Fall 2005: Course assistant of *Differential Geometry*,
 - Spring 2004: Course assistant of *Computational Methods*,
 - Fall 2004: Course assistant of *Mathematical Analysis*,

References

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