Qizheng Yin

BICMR, Peking University
78306 Jingchunyuan Courtyard 78
5 Yiheyuan Road, Haidian District
Beijing 100871, China
qizheng@math.pku.edu.cn
http://bicmr.pku.edu.cn/~qizheng

First name / last name: Qizheng / Yin
Date of birth: 18 July 1986
Place of birth: Hebei, China
Citizenship: China
Marital status: married, with two children

Research area

Algebraic geometry — algebraic cycles, moduli spaces, enumerative geometry, algebraic curves, abelian varieties, $K3$ surfaces, hyper-Kähler varieties

Employment

Since 2023: BICMR, Peking University

- Associate professor

2017–2022: BICMR, Peking University

- Assistant professor (tenure track)

2014–2016: ETH Zürich

- Postdoc in the group of Rahul Pandharipande

Education

2013–2013: Radboud Universiteit Nijmegen & Université Pierre et Marie Curie–Paris VI

- PhD, mention *très honorable.*
- Thesis: *Tautological cycles on curves and Jacobians*, supervised by Ben Moonen and Claire Voisin.

2010–2013: Université Pierre et Marie Curie–Paris VI & Universiteit van Amsterdam
2008–2010: École normale supérieure & Université Pierre et Marie Curie–Paris VI

- Master of Science, mention *très bien.*
- Thesis: *Motifs de dimension finie et applications aux conjectures de Bloch–Beilinson* (in French), supervised by Claire Voisin.

2007–2008: École normale supérieure & Université Paris Diderot–Paris VII

- Bachelor of Science, mention *très bien.*
- Thesis: *Géométrisation des surfaces : construction de l'espace de Teichmüller* (in French), joint with Jérémy Guéré and supervised by Mathieu Cossutta.

2004–2007: Peking University

Grants and honors

- National Key R&D Program of China 2025YFA017300, *Algebraic cycles and applications*, co-PI, 2025–2030.
- NSFC Major Program 11890661, *Mirror symmetry conjectures and related topics*, co-PI, 2019–2023.
- NSFC Key Program 11831013, *Theory of moduli spaces and applications*, co-PI, 2019–2023.
- NSFC Young Scientists Fund 11701014, *Gromov–Witten theory and algebraic cycles on hyper-Kähler varieties*, PI, 2018–2020.
- Algebraic Geometry (journal name) Prize, Foundation Compositio Mathematica, 2017.

(Pre)publications

(1) (With Davesh Maulik and Junliang Shen) *Dualizable abelian fibrations*, Preprint 2026, arXiv:2602.19318.

(2) (With Davesh Maulik and Junliang Shen) *On the Orlov conjecture for hyper-Kähler varieties via hyperholomorphic bundles*, Preprint 2026, arXiv:2601.20289.

(3) (With Younghan Bae, Davesh Maulik, and Junliang Shen) *The intrinsic cohomology ring of the universal compactified Jacobian over the moduli space of stable curves*, Preprint 2025, arXiv:2509.05577.

(4) (With James Hotchkiss, Davesh Maulik, Junliang Shen, and Ruxuan Zhang) *The period–index problem for hyper-Kähler varieties via hyperholomorphic bundles*, Preprint 2025, arXiv:2502.09774.

(5) (With Davesh Maulik, Junliang Shen, and Ruxuan Zhang) *The D-equivalence conjecture for hyper-Kähler varieties via hyperholomorphic bundles*, Inventiones Mathematicae 241 (2025), no. 1, 309–324.

(6) (With Davesh Maulik and Junliang Shen) *Algebraic cycles and Hitchin systems*, Annales Scientifiques de l'École Normale Supérieure (4) 59 (2026), no. 3, 637–682.

(7) (With Younghan Bae, Davesh Maulik, and Junliang Shen) *On generalized Beauville decompositions*, Selecta Mathematica. New Series 32 (2026), no. 3, Paper No. 45.

(8) (With Davesh Maulik and Junliang Shen) *Perverse filtrations and Fourier transforms*, Acta Mathematica 234 (2025), no. 1, 1–69.

(9) (With Davesh Maulik and Junliang Shen) *Fourier–Mukai transforms and the decomposition theorem for integrable systems*, Algebraic Geometry 13 (2026), no. 2, 266–304.

(10) (With Junliang Shen) *Perverse–Hodge complexes for Lagrangian fibrations*, Épijournal de Géométrie Algébrique EPIGA, Special volume in honour of Claire Voisin (2023), Art. 6, 20 pp.

(11) (With Camilla Felisetti and Junliang Shen) *On intersection cohomology and Lagrangian fibrations of irreducible symplectic varieties*, Transactions of the American Mathematical Society 375 (2022), no. 4, 2987–3001.

(12) (With Andrei Neguț and Georg Oberdieck) *Motivic decompositions for the Hilbert scheme of points of a $K3$ surface*, Journal für die Reine und Angewandte Mathematik 778 (2021), 65–95.

(13) (With Andrew Harder, Zhiyuan Li, and Junliang Shen) *$P = W$ for Lagrangian fibrations and degenerations of hyper-Kähler manifolds*, Forum of Mathematics. Sigma 9 (2021), Paper No. e50, 6 pp.

(14) (With Junliang Shen) *Topology of Lagrangian fibrations and Hodge theory of hyper-Kähler manifolds*, with an appendix by Claire Voisin, Duke Mathematical Journal 171 (2022), no. 1, 209–241.

(15) (With Georg Oberdieck and Junliang Shen) *Rational curves in holomorphic symplectic varieties and Gromov–Witten invariants*, Advances in Mathematics 357 (2019), 106829, 28 pp.

(16) (With Junliang Shen) *$K3$ categories, one-cycles on cubic fourfolds, and the Beauville–Voisin filtration*, Journal of the Institute of Mathematics of Jussieu 19 (2020), no. 5, 1601–1627.

(17) (With Dan Petersen and Mehdi Tavakol) *Tautological classes with twisted coefficients*, Annales Scientifiques de l'École Normale Supérieure (4) 54 (2021), no. 5, 1179–1236.

(18) (With Junliang Shen and Xiaolei Zhao) *Derived categories of $K3$ surfaces, O'Grady's filtration, and zero-cycles on holomorphic symplectic varieties*, Compositio Mathematica 156 (2020), no. 1, 179–197.
(19) (With Rahul Pandharipande) *Relations in the tautological ring of the moduli space of $K3$ surfaces*, Journal of the European Mathematical Society (JEMS) 22 (2020), no. 1, 213–252.
(20) (With Nebojsa Pavic and Junliang Shen) *On O'Grady's generalized Franchetta conjecture*, International Mathematics Research Notices IMRN (2017), no. 16, 4971–4983.
(21) (With Zhi Jiang) *On the Chow ring of certain rational cohomology tori*, Comptes Rendus Mathématique de l'Académie des Sciences, Paris 355 (2017), no. 5, 571–576.
(22) (With Yi Zhu) *$\mathbb{A}^1$-equivalence of zero cycles on surfaces, II*, Annals of K-theory 3 (2018), no. 3, 379–393.
(23) (With Jim Bryan, Georg Oberdieck, and Rahul Pandharipande) *Curve counting on abelian surfaces and threefolds*, Algebraic Geometry 5 (2018), no. 4, 398–463.
(24) *Cycles on curves and Jacobians: a tale of two tautological rings*, Algebraic Geometry 3 (2016), no. 2, 179–210.
(25) (With Ben Moonen) *Some remarks on modified diagonals*, Communications in Contemporary Mathematics 18 (2016), no. 1, 1550009, 16 pp.
(26) *Finite-dimensionality and cycles on powers of $K3$ surfaces*, Commentarii Mathematici Helvetici 90 (2015), no. 2, 503–511.
(27) *The generic nontriviality of the Faber–Pandharipande cycle*, International Mathematics Research Notices IMRN (2015), no. 5, 1263–1277.

Invited talks

(1) *On the ring structure of the cohomology of compactified Jacobians*, Workshop 'Rationality and algebraic cycles', Tianyuan Mathematics Research Center, Aug 2026.
(2) *Lagrangian fibrations and hyper-Kähler varieties: an analogy*, 2026 Pacific rim conference on complex and symplectic geometry, USTC Shanghai, Aug 2026.
(3) *Lagrangian fibrations and hyper-Kähler varieties: an analogy*, Fifth national algebraic geometry conference, Peking University, Jul 2026.
(4) *On the ring structure of the cohomology of compactified Jacobians*, Workshop 'Algebraic curves: moduli and syzygies', Cetraro, Jun 2026.
(5) *Markman's hyperholomorphic bundles and how to use them*, Conference on algebraic geometry and complex geometry, Wuhan University, May 2026.
(6) *A user's guide to Markman's hyperholomorphic bundles*, School and workshop on derived category, Yonsei University, Dec 2025.
(7) *On the cohomology of universal Jacobians*, Workshop 'Cycles on moduli spaces', CIRM, Nov 2025.
(8) *On the cohomology of universal Jacobians*, Geometry and algebra workshop, Nanjing University, Nov 2025.
(9) *On the cohomology of universal Jacobians*, Algebraic geometry workshop, BIMSA, Oct 2025.
(10) *D-equivalence conjecture for $K3^{[n]}$*, Workshop 'Motives, K-theory and related topics', Beijing, Sep 2025.
(11) *Topology of abelian fibrations via algebraic cycles*, 2025 Summer research institute in algebraic geometry, Colorado State University, Jul 2025.
(12) *Cohomology of compactified Jacobians: Fourier transform and perverse filtration II*, Workshop 'A Saturday of moduli', ETH Zürich, Jun 2025.
(13) *A Beauville decomposition for the Hitchin system*, Sino–French conference on algebraic geometry (in memory of Prof. Gang Xiao), Chinese Academy of Sciences, Oct 2024.

(14) *D-equivalence conjecture for* $K3^{[n]}$, Workshop 'Hyperkähler varieties and related topics, II', Roma Sapienza, Oct 2024.
(15) *A Beauville decomposition for the Hitchin system*, Clay workshop 'The $P = W$ conjecture in non abelian Hodge theory', Oxford, Sep–Oct 2024.
(16) *A Beauville decomposition for the Hitchin system*, Conference 'New perspectives on hyperkähler manifolds and moduli of vector bundles' in honor of Kieran O'Grady, Cetraro, Sep 2024.
(17) *Cohomological and motivic aspects of compactified Jacobian fibrations*, HyperK seminar, Jussieu, Jun 2024.
(18) *Generalized Beauville decompositions*, School and workshop on moduli, K-trivial varieties, and related topics, IBS-CCG, Feb 2024.
(19) *On extending the Beauville decomposition*, Workshop 'Geometry of hyperKähler varieties', Hangzhou, Sep 2023.
(20) *Abelian fibrations, Perverse = Chern, and multiplicativity*, Algebraic geometry and moduli seminar, ETH Zürich, Aug 2023.
(21) *Perverse–Hodge symmetry for Lagrangian fibrations*, Conference 'Géométrie algébrique' in honor of Claire Voisin's 60th birthday, IHP, May 2022.
(22) *Perverse–Hodge symmetry for Lagrangian fibrations*, Seminar 'Algebraic geometry in East Asia', online, Apr 2022.
(23) *On the perverse = Hodge phenomenon*, Alegebraic geometry seminar, Jussieu, Dec 2021.
(24) *Two applications of the LLV algebra*, Algebraic geometry seminar, Stony Brook, Apr 2021.
(25) *The Chow ring of* $\mathrm{Hilb}(K3)$ *revisited*, Seminar 'Algebraic geometry in East Asia', online, Oct 2020.
(26) *A compact analogue of* $P = W$, Workshop 'Moduli of Higgs bundles and holomorphic symplectic geometry', ETH Zürich, Jan 2020.
(27) *On the topology of Lagrangian fibrations*, Lecture series in algebraic geometry, Chinese Academy of Sciences, Sep 2019.
(28) *Topology of Lagrangian fibrations and Gopakumar–Vafa invariants of* $K3$ *surfaces*, Beijing–Zurich moduli workshop, Peking University, Sep 2019.
(29) *A compact analogue of the* $P = W$ *conjecture*, Workshop on algebraic geometry, Fudan University, Jul 2019.
(30) *A compact analogue of the* $P = W$ *conjecture*, Workshop 'Discrete groups and moduli', Nagoya University, Jun 2019.
(31) *On the tautological ring of the moduli space of* $K3$ *surfaces*, Hong Kong geometry colloquium, HKUST, Mar 2019.
(32) *Perverse sheaves, holomorphic Lagrangian fibrations, and hyper-Kaehler geometry*, MIST 2019 workshop, Chinese University of Hong Kong, Jan 2019.
(33) *Special cycles on holomorphic symplectic varieties*, Conference 'Algebraic geometry in East Asia', Hanoi, Oct 2018.
(34) *Special subvarieties in holomorphic symplectic varieties*, Workshop 'Cohomology of algebraic varieties', CIRM, Oct 2018.
(35) *Generalizations of the Bogomolov–Mumford theorem*, Workshop 'Algebraic surfaces and related topics', Xiamen University, Sep 2018.
(36) *Special subvarieties in holomorphic symplectic varieties*, Workshop 'Classical algebraic geometry', Oberwolfach, Jul 2018.
(37) *Rational curves and special subvarieties in holomorphic symplectic varieties*, Workshop on algebraic geometry, Chinese Academy of Sciences, Jun 2018.
(38) *Motivic aspects of the tautological ring of* $\mathcal{M}_g$, Winter young algebraic geometer workshop, SUSTC, Dec 2017.
(39) *Curves, sheaves, and cycles on* $K3$ *surfaces*, Seminar at IBS-CGP, POSTECH, Dec 2017.

(40) *$K3$ categories and algebraic cycles on holomorphic symplectic varieties*, Pearl symposium in geometry, Chinese University of Hong Kong, Nov 2017.
(41) *$K3$ categories and zero cycles on holomorphic symplectic varieties*, Algebraic geometry conference in honor of Arnaud Beauville's 70th birthday, Chinese Academy of Sciences, Oct 2017.
(42) *Chow groups and derived categories of $K3$ surfaces*, Second BICMR & IBS-CGP joint symplectic geometry workshop, Peking University, Sep 2017.
(43) *Derived categories of $K3$ surfaces and zero cycles on holomorphic symplectic varieties*, First national algebraic geometry conference, Chinese Academy of Sciences, Jul 2017.
(44) *Cycles on $K3$ surfaces and hyper-Kähler varieties via Gromov–Witten theory*, BICMR–Tokyo algebraic geometry workshop, Peking University, May 2017.
(45) *Gromov–Witten theory, cycles on moduli of $K3$'s, and cycles on hyper-Kähler's*, Workshop 'Cycles and moduli', ETH Zürich, Mar 2017.
(46) *Curves and cycles on $K3$ surfaces*, Mathematics and string theory seminar, Kavli IPMU, Feb 2017.
(47) *Cycles on the universal $K3$ surface*, Workshop on algebraic geometry, Xiamen University, Jan 2017.
(48) *Zero cycles on log $K3$ surfaces*, Master lectures and workshop 'Hyper-Kaehler manifolds, Hodge theory and Chow groups', TSIMF, Dec 2016.
(49) *Curve counting on abelian threefolds*, BICMR & IBS-CGP joint symplectic geometry workshop, Jeju, Oct–Nov 2016.
(50) *Curves and cycles on $K3$ surfaces*, Beijing geometry and physics colloquium, Peking University, Oct 2016.
(51) *Decomposition of the small diagonal for families of $K3$ surfaces*, Workshop 'Derived categories and Chow groups of hyperkaehler and Calabi–Yau varieties', SCGP, Sep 2016.
(52) *Cycles on $K3$ surfaces via stable maps*, Workshop 'Curves on surfaces and 3-folds', EPFL, Jun 2016.
(53) *Comptage de courbes sur les surfaces abéliennes* (in French), Arithmetic et algebraic geometry seminar, University of Strasbourg, Nov 2015.
(54) *Curve counting on abelian varieties: old and new*, Seminar 'Geometry and algebra, geometry and analysis', Utrecht University, Oct 2015.
(55) *Curve counting on abelian surfaces and threefolds*, Workshop 'Algebraic geometry', Oberwolfach, Mar 2015.
(56) *Curve counting on abelian surfaces and threefolds*, Algebra and number theory seminar, University of Copenhagen, Feb 2015.
(57) *Curve counting on abelian surfaces and threefolds*, Workshop 'Motivic invariants related to $K3$ and abelian geometries', HU Berlin, Feb 2015.
(58) *Tautological cycles on curves, surfaces, abelian and hyper-Kähler varieties*, Seminar of geometry, University Roma Tre, Nov 2014.
(59) *Tautological cycles on powers of varieties*, Workshop 'Classical algebraic geometry', Oberwolfach, Jun–Jul 2014.
(60) *Cycles on powers of varieties*, Algebra and number theory seminar, University of Augsburg, Apr 2014.
(61) *Tautological cycles on curves and Jacobians*, Workshop 'Algebraic cycles and tautological classes', Radboud University Nijmegen, Dec 2013.
(62) *A tale of two tautological rings*, Geometry and mathematical physics seminar, University of Amsterdam, Oct 2013.
(63) *A tale of two tautological rings*, Workshop 'Cohomology of the moduli space of curves', ETH Zürich, Oct 2013.
(64) *Cycles on Jacobians*, Algebraic geometry seminar (SAG), Bonn, May 2013.
(65) *Cycles algébriques sur les variétés abéliennes et les jacobiennes* (in French), Seminar 'Réseau d'étudiants en géométrie algébrique (RéGA)', IHP, Apr 2013.

(66) *Interesting cycles on symmetric powers of curves*, Algebraic geometry and moduli seminar, ETH Zürich, Mar 2013.
(67) *On the tautological ring of the universal curve*, Algebraic geometry and moduli seminar, ETH Zürich, Nov 2012.
(68) *On the tautological ring of the universal curve*, Algebra and geometry seminar, University of Amsterdam, Sep 2012.

Teaching

Peking University

- Fall 2026: Algebra I (honors)
- Spring 2026: Linear algebra B
- Fall 2025: Topics in algebraic geometry
- Spring 2025: Algebraic geometry II
- Fall 2024: Algebraic geometry I
- Spring 2024: Algebraic geometry II
- Fall 2023: Algebraic geometry I
- Spring 2023: Basic algebraic geometry
- Fall 2022: Linear algebra B
- Spring 2022: Hodge theory and complex algebraic geometry
- Fall 2021: Linear algebra A
- Spring 2021: Undergraduate geometry seminar
- Fall 2020: Topics in algebraic geometry
- Spring 2020: Geometry II (honors)
- Fall 2019: Linear algebra B
- Spring 2019: Geometry II (honors)
- Fall 2018: Algebraic geometry II
- Spring 2018: Undergraduate seminar on elliptic curves
- Spring 2017: Topics in algebraic geometry

ETH Zürich

- Spring 2014: Algebraic cycles and motives (mini-course)

Radboud Universiteit Nijmegen

- Fall 2013: Smooth manifolds (reading course)

Université Paris VI

- Spring 2011: TD algèbre et géométrie (in French)