

Huaiqing Zuo

Curriculum Vitae

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"No man should escape our universities without knowing how little he knows." – J. Robert Oppenheimer

Education

- 2010–Present **Ph.D. Candidate in Pure Mathematics**, *University of Illinois at Chicago, Department of Mathematics, Statistics, and Computer Science*, Chicago, IL.
My interests are Algebraic Geometry, Singularity theory and Coding Theory
- 2009–2010 **M.S. in Pure Mathematics**, *University of Illinois at Chicago*, Chicago, IL.
- 2004–2010 **Ph.D. in Pure Mathematics**, *East China Normal University*, Shanghai, China.
- 2007–2008 **Exchange student**, *University of Illinois at Chicago*, Chicago, IL.
Work with Prof. Yau
- 1998–2002 **B.A. in Pure Mathematics**, *Guangzhou University*, Guangzhou, China.
Graduated with High Honor.

Experience

Vocational

- 2009–Present **Teaching Assistant**, *University of Illinois*, Chicago, IL.
Lead discussion sections for large lecture courses.
- 2002–2004 **Math. Teacher**, *Guangzhou No. 6 Middle school*, Guangzhou, China.
Teaching math.

Teaching Assistant Experience

- Calculus III, Spring 2010
- Pre-Calculus, Fall 2010
- Calculus I, Spring 2011
- Calculus II, Summer 2011
- Calculus I, Fall 2011
- Calculus II, Spring 2012
- Calculus II, Summer 2012

Computer skills

Languages MATLAB, Latex, Maple, Magma,
Singular.
Tools Word, Excel.

Languages

Chinese **Fluent**

My native language.

English **Fluent**

Speaking, reading, and writing.

French **Intermediate**

reading.

German **Intermediate**

reading.

Interests

Bicycling My lifelong sport.
Table Tennis I've been playing for 20 years.
Photography Digital photography is my newest hobby.

Talks

- K3 surface and Torelli theorem, Algebra Geometry seminar, ECNU, spring, 2007
- Normal 2 dimensional singularities, Graduate Student Algebra Geometry seminar, University of Illinois at Chicago, spring, 2008
- Introduction to toric variety, The UIC Algebraic Geometry Seminar , University of Illinois at Chicago, spring, 2008
- Moduli of Curve, Graduate Student Algebra Geometry seminar, University of Illinois at Chicago, fall, 2008

Conferences

- Conference on algebraic Geometry, Fu dan university September 14 - September 16, 2005
- Forum about Chinese Mathematic and Eduction, Zhejiang university, Hangzhou 6.30-7.2 2006
- Summer school at East China Normal University, summer, 2006
- The Second Chinese-German Conference Komplexe Geometrie (Complex Geometry) East China Normal University, Shanghai, China September 11 - September 16, 2006
- The 10th National Conference on Algebra, Xiamen October 22 - October 27, 2006
- Summer school at East China Normal University, summer, 2007
- Midwest Number Theory Days, University of Illinois at Chicago, March 7-8 2008

- A Conference to celebrate Robin Hartshorne's 70th birthday, University of Illinois at Chicago, April 11-13 2008
- 2nd Bluegrass Algebra Conference, Department of Mathematics University of Kentucky Lexington, March 6-8, 2009
- Algebraic Geometry: A Conference in Honor of Anatoly Libgober's 60th Birthday October 16-18, 2009, Chicago, University of Illinois at Chicago
- AMS Sectional Meeting November 5-7, 2010, Notre Dame, University of Notre Dame
- Ohio State-Michigan-UIC Algebraic Geometry Workshop October 2-3, 2010, Chicago, University of Illinois at Chicago
- Midwest Algebra, Geometry and their Interactions Conference, MAGIC'10 April 23-25, 2010, Notre Dame, University of Notre Dame
- UM/UIC/OSU Weekend Algebraic Geometry Workshop March 13-14, 2010, Columbus, Ohio State University
- Workshop in Algebraic Geometry: on the occasion of the retirement of Igor Dolgachev April 2-3, 2011, Ann Arbor, University of Michigan
- Midwest Commutative Algebra and Geometry Conference May 22 - 26, 2011, West Lafayette, Purdue University

Professional Activities

- Referee for Proceeding of AMS, Houston Journal of Mathematics, Science in China.

List of Publications

1. Notes on classification of toric surface codes of dimension 5 (with Stephen Yau), *Applicable Algebra in Engineering, Communication and Computing*, 20 (2009), 175-185.
2. Classification of gradient space of dimension 8 with a reducible $sl(2, \mathbb{C})$ action (with Stephen Yau and Yung Yu) *Science in China, Series A Mathematics*, (2009), 52 (12), 2792-2828.
3. Lojasiewicz inequality for weighted homogeneous polynomial with isolated singularities (with Shengli Tan and Stephen Yau), *Proceeding of the Amer. Math. Soc.* Vol 138, No 11, (2010), 3975-3984.
4. On the Parameters of Two Special Toric Surface Codes, (with Ping Zhang and Xue Luo), *Chinese Annals of Mathematics, Series A,C*, vol 31, No.5, (2010) 517-524.
5. Biggest sharp polynomial estimate of integral points in right-angled simplices (with Stephen Yau and Linda Zhao), *Contemporary Mathematics*, AMS, Vol.538, (2011), 433-467.
6. Coordinate-free characterization of homogeneous polynomials with isolated singularities, (with Irene Chen, Ke-Pao Lin, and Stephen Yau), *Communications in analysis and geometry*, vol 19, No.4,(2011) 1-42.

7. Lower estimate of Milnor number and characterization of isolated homogeneous hypersurface singularities (with Stephen Yau) (to appear), Pacific Journal of Mathematics.
8. On classification of toric surface codes of low dimension, (with Xue Luo and Stephen Yau), 20 pp. in ms., submitted for publication.
9. A sharp estimate of Dickman-De Bruijn function and a sharp polynomial estimate of positive integral points in 4-dimensional tetrahedron, (with Xue Luo and Stephen Yau), 20 pp. in ms., submitted for publication.
10. Complete characterization of isolated homogeneous hypersurface singularities, (with Stephen Yau), 10pp. in ms, submitted for publication.
11. Rigidity of CR morphisms between compact strongly pseudoconvex CR manifolds, II, (with Stephen Yau), 16pp. in ms, submitted for publication.
12. On number theoretic conjecture of positive integral points in 5-dimensional tetrahedron and a sharp estimation of Dickman-De Bruijn function (with Ke-Pao Lin, Xue Luo, and Stephen Yau), 33pp. in ms, submitted for publication.
13. Nonnegative weight derivations of isolated weighted homogeneous hypersurface singularities, (with Stephen Yau), 20pp. in ms, submitted for publication.
14. Non-constant CR morphisms between compact strongly pseudo-convex CR manifolds and etale covering between resolutions of isolated singularities, (with Yu-Chao Tu and Stephen Yau), 18 pp. in ms, submitted for publication.
15. Characterization of isolated complete intersection singularities with \mathbb{C}^* -action of dimension $n \geq 2$ by means of geometric genus and irregularity, (with Stephen Yau). 15 PP. submitted for publication.