Department of Mathematics
University of Georgia
222 D. W. Brooks Dr.
Athens, Georgia, 30602, United States

Mobile Phone: +86-137-6682-2808
Email: ziqing@uga.edu
Homepage: http://ziqing.org

Education

Sep. 2010 - Jun. 2014	B.Sc. in Computer Science, Shanghai Jiao Tong University.
Aug. 2014 - May 2019 (anticipated)	Ph.D. in Mathematics, University of Georgia.
	Advisor: Daniel K. Nakano, Secondary Advisor: Chun-Ju Lai

Research Interests

Representation Theory

- Algebraic Groups
- Cohomology
- Iwahori-Hecke Algebras
- *q*-Schur Algebras
- Quantum Groups

Combinatorics

- Association Schemes
- Design Thoery
- Graph Theory
- Symbolic Dynamics
- Pylogenetic Combinatorics

Publications

[1] *Support varieties for Hecke algebras* (with Daniel Nakano),
Homology, Homotopy and Applications, accepted, 2018.

[2] *Nonexistence of nontrivial tight 8-designs*,
Journal of Algebraic Combinatorics, 47(2), 301-318, 2018.

[3] *Hamiltonian decomposition of prisms over cubic graphs* (with Moshe Rosenfeld),
Discrete Mathematics & Theoretical Computer Science, 16(2):111-124, 2014.

[4] *A Fisher type inequality for weighted regular t-wise balanced designs*,
Journal of Combinatorial Theory A, 119(7):1523-1527, 2012.

Papers Submitted

The preprints are available on my personal homepage.

[5] *Rational designs* (with Zhen Cui and Jiacheng Xia), 2017.

[6] *Explicit spherical designs*, 2018.

[7] *Classification problem of certain spherical embeddings of strongly regular graphs* (with Eiichi Bannai,
Etsko Bannai, Wei-Hsuan Yu and Yan Zhu), 2018.

[8] *Integral points on variable separated curves* (with Dino Lorenzini), 2018.

Papers in Preparation

Some abstracts are available on my personal homepage.

[9] *On q-Schur algebras corresponding to Hecke algebras of type B* (with Chun-Ju Lai and Daniel Nakano).

[10] *Hamiltonian thickness and spanning topological minors* (with Yaokun Wu and Yinfeng Zhu).

[11] *Nonexistence of s-distance 2s-designs on unitary groups.*

[12] *Lit-only σ-game* (with Yaokun Wu).

[13] *Inferring phylogenies from incomplete metric information* (with Yaokun Wu, Zeying Xu and Yinfeng Zhu).

[14] *Positive matrices, primitive matrices, scrambling matrices, contractible matrices* (with Xinmao Wang and Yaokun Wu).

[15] *Product of P-polynomial association schemes.*

[16] *On s-distance sets in real hyperbolic space.*

Conference Talks

The slides are available on my personal homepage.

- *Support varieties for Hecke algebras*,
  Southeastern Lie Theory Workshop X,
  University of Georgia, Jun. 11, 2018.

- *An explicit construction of spherical designs*,
  International Workshop on Bannai-Ito Theory,
  Zhejiang University, Nov. 25, 2017.

- *The lit-only σ-game*,
  2015 Workshop on Combinatorics and Applications at SJTU,
  Shanghai Jiao Tong University, Apr. 25, 2015.

- *Spherical designs over a number field*,
  2015 Workshop on Combinatorics and Applications at SJTU,
  Shanghai Jiao Tong University, Apr. 24, 2015.

- *Tight block designs*,
  Sphere Packings, Lattices, and Designs,
  Erwin Schrödinger International Institute, Oct 27, 2014.

- *Product of P-polynomial association schemes*,
  Workshop on Algebraic Combinatorics,
  Hebei Normal University, Nov. 19, 2013.

- *Lit-only σ-game*,
  The 2nd Pacific Rim Mathematical Association Congress,
  Shanghai Jiao Tong University, Jun. 24, 2013.

- *Some s-distance set in hyperbolic space*,
  Mini-Workshop on Spherical Designs and Related Topics,
  Shanghai Jiao Tong University, Nov. 21, 2012.

- *Incidence matrix and cover matrix*,
  The 2nd Japan-Taiwan Conference on Combinatorics and its Applications,
  Nagoya University, Nov. 11, 2012.

- *Nonexistence of nontrivial tight 8-design*,
  2012 Shanghai Conference on Algebraic Combinatorics,
  Shanghai Jiao Tong University, Aug. 18, 2012.

- *Fisher type inequality*,
  Workshop on Algebraic Combinatorics,
  Shanghai Jiao Tong University, Sep. 16, 2011.

Seminar Talks

- *Good subsets of the unit circle*,
  Graduate Student Summer Conference,
  University of Georgia, Jul. 27, 2018.

- *Support varieties for Hecke algebras*,
  Algebra Seminar,
  University of Georgia, Feb. 5, 2018.

- *An introduction to Soergel bimodules*,
  Algebra Seminar,
  University of Georgia, Nov. 6, 2017.

- *Dimensions of Specht modules*,
  Graduate Student Summer Conference,
  University of Georgia, Jul. 26, 2017.

- *An explicit construction of spherical designs*,
  Combinatorics Seminar,
  Shanghai Jiao Tong University, May 29, 2017.

- *Support varieties of Iwahori-Hecke algebras of type A*,
  Graduate Student Summer Conference,
  University of Georgia, Jul. 28, 2016.

- *Sphere packings, spherical codes and spherical designs*,
  Number Theory Seminar,
  University of Georgia, Apr. 13, 2016.

- *Nonexistence of tight 8-design*,
  Number Theory Seminar,
  University of Georgia, Jan. 28, 2015.

- *Structure of strongly connected digraphs*,
  Combinatorics Seminar,
  Shanghai Jiao Tong University, Jul. 9, 2014.

- *Laplacians*,
  Combinatorics Seminar,
  Shanghai Jiao Tong University, Apr. 12, 2014.

- *Relative designs, totally positive sequence and zero distribution*,
  Combinatorics Seminar,
  Shanghai Jiao Tong University, Jun. 13, 2013.

- *Some s-distance sets in hyperbolic space*,
  Combinatorics Seminar,
  Shanghai Jiao Tong University, Nov. 21, 2012.

- *On the nonexistence of nontrivial tight 8-design*,
  Combinatorics Seminar,
  Shanghai Jiao Tong University, Jun. 6, 2012.

- *Rational spherical t-semidesign*,
  Combinatorics Seminar,
  Shanghai Jiao Tong University, Apr. 22, 2012.

- *A glimpse at P-polynomial association schemes*,
  Combinatorics Seminar,
  Shanghai Jiao Tong University, Mar. 4, 2012.

Teaching

- Precalculus - MATH 1113 - Sections 20571,
  University of Georgia, 2018 Spring.

- Precalculus - MATH 1113 - Sections 15369 and 29605,
  University of Georgia, 2017 Fall.

- Calculus I - MATH 2250 - Section 40630,
  University of Georgia, 2017 Spring.

- Precalculus - MATH 1113 - Section 15218,
  University of Georgia, 2016 Fall.

- Computational Number Theory,
  Shanghai Jiao Tong University, 2012 Summer.

- Real Analysis,
  Shanghai Jiao Tong University, 2011 Spring.

- Calculus,
  Shanghai Jiao Tong University, 2010 Fall.

Grants

- Chun-Tsung Program, Shanghai Jiao Tong University, Sep. 2013 - Jun. 2014.

Conference organization

- Southeast Lie Theory X, University of Georgia, Jun. 2018.

- Minisymposium on Combinatorics, Shanghai Jiao Tong University, Apr. 2014.

- Mini-Workshop on Spherical Designs and Related Topics, Shanghai Jiao Tong University, Nov. 2012.

- 2012 Shanghai Conference on Algebraic Combinatorics, Shanghai Jiao Tong University, Aug. 2012.