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Curriculum Vitae

Education

- 2004–2009 **Ph.D.**, *Department of Mathematics*, Zhejiang University, China.
Advisor: Gennian Ge
- 2000–2004 **B.Math.**, *Department of Mathematics*, Henan University, China.

Ph.D. Thesis

Title *Group Divisible 3-Wise Balanced Designs: Theory and Applications*

Work experience

- 2016.3–Present **Professor (a three-year position)**, *School of Mathematical Sciences, University of Science and Technology of China*, China.
- 2012.8–2016.2 **Research Fellow**, *Division of Mathematical Sciences, Nanyang Technological University*, Singapore.
- 2011.8–2012.7 **Research Fellow**, *Department of Mathematical Sciences, Monash University*, Australia.
- 2009.7–2011.7 **Research Fellow**, *Division of Mathematical Sciences, Nanyang Technological University*, Singapore.

Research interests

- Combinatorics Combinatorial design theory such as Steiner systems, Room squares, Hadamard Matrices, group divisible designs and Latin squares
- Applications Combinatorial structures or decompositions of graphs with applications in bioinformatics, network, database theory and coding theory

Research publications

Refereed journal papers

1. (with Y. M. Chee, C. J. Colbourn, A. C. H. Ling and H. Zhang), "Optimal low-power coding for error correction and crosstalk avoidance in on-chip data buses," *Des. Codes Cryptogr.*, Vol. 77, No 2, pp.479–491, 2015.
2. (with L. Jin and C. Xing), "On the list-decodability of random self-orthogonal codes," *IEEE Trans. Inform. Theory*, Vol. 61, No 02, pp. 820–828, 2015.
3. (with Y. M. Chee and H. Zhang), "Complexity of dependencies in bounded domains, Armstrong codes, and generalizations," *IEEE Transactions on Information Theory*, Vol. 61, No 02, pp. 812–819, 2015.
4. (with Y. M. Chee, H. M. Kiah and H. Zhang), "Optimal codes in the Enomoto-Katona

- space," *Combinatorics, Probability and Computing*, Vol. 24, No 02, pp. 382–406, 2015.
5. (with Y. M. Chee, G. Ge and H. Zhang), "Hanani triple packings and optimal q -ary codes of constant weight three," *Des. Codes Cryptogr.*, Vol. 75, No 3, pp. 387–403, 2015.
 6. (with B. D. McKay and I. M. Wanless), "The order of automorphisms of quasigroups," *J. Combin. Des.*, Vol 23, No 7, pp. 275–288, 2015.
 7. (with Y. M. Chee, Z. Cherif, J.-L. Danger, S. Guilley, H. M. Kiah, J.-L. Kim and P. Solé), "Multiply constant-weight codes and the reliability of loop physically unclonable functions," *IEEE Trans. Inform. Theory*, Vol. 60, No 11, pp. 7026–7034, 2014.
 8. (with I. M. Wanless), "On the existence of retransmission permutation arrays," *Discrete Appl. Math.*, Vol. 161, No 16–17, pp. 2772–2777, 2013.
 9. (with I. M. Wanless), "Transversals of latin squares and covering radius of sets of permutations," *European Journal of Combinatorics*, Vol. 37, No 7, pp. 1130–1143, 2013.
 10. (with G. Ge), "A new existence proof for Steiner quadruple systems," *Des. Codes Cryptogr.*, Vol. 69, No 1, pp.65–76, 2013.
 11. (with Y. M. Chee), "Improved constructions of frameproof codes," *IEEE Trans. Inform. Theory*, Vol. 58, No 8, pp. 5449–5453, 2012.
 12. (with H. Zhang and G. Ge), "Optimal ternary constant-weight codes with weight four and distance five," *IEEE Trans. Inform. Theory*, Vol. 58, No 5, pp. 2706–2718, 2012.
 13. (with H. Zhang and G. Ge), "Optimal constant weight covering codes and nonuniform group divisible 3-designs with block size four," *Des. Codes Cryptogr.*, Vol. 62, No 2, pp.143–160, 2012.
 14. (with Y. M. Chee, S. Ling and Y. Tan), "Universal cycles for minimum coverings of pairs by triples, with application to 2-radius sequences," *Math. Comp.*, Vol. 81, No. 277, pp. 585–603, 2012.
 15. (with J.-C. Bermond, Y. M. Chee and N. Cohen), "The α -arboricity of complete uniform hypergraphs," *SIAM J. Discrete Math.*, Vol. 34, No. 2, pp. 600–610, 2011.
 16. (with Y. M. Chee and Y. Tan), "Strongly regular graphs constructed from p -ary bent functions," *Journal of Algebraic Combinatorics*, Vol. 34, No. 2, pp. 251–266, 2011.
 17. (with Y. M. Chee and H. Zhang), "Infinite families of optimal splitting authentication codes secure against spoofing attacks of higher order," *Adv. Math. Commun.*, Vol. 5, No 1, pp.59–68, 2011.
 18. (with G. Ge), "H-designs with the properties of resolvability or $(1, 2)$ -resolvability," *Des. Codes Cryptogr.*, Vol. 57, No 3, pp.225–256, 2010.
 19. (with G. Ge), "Combinatorial constructions of fault-tolerant routings with levelled minimum optical indices," *Discrete Appl. Math.*, Vol. 158, No 8, pp.951–963, 2010.
 20. (with G. Ge), "Existence of resolvable H-designs with group sizes 2, 3, 4 and 6," *Des. Codes Cryptogr.*, Vol. 55, No 1, pp.81–101, 2010.
 21. (with G. Ge), "Maximal resolvable packings and minimal resolvable coverings of triples by quadruples," *J. Combin. Des.*, Vol. 18, No 3, pp.209–223, 2010.
 22. (with G. Ge and Y. Miao), "On block sequences of Steiner quadruple systems with error correcting consecutive unions," *SIAM J. Discrete Math.*, Vol. 23, No 2, pp.940–958, 2009.
 23. (with G. Ge), "Existence of Z-cyclic 3PDTWh(p) for prime $p \equiv 1 \pmod{4}$," *Des. Codes Cryptogr.*, Vol. 45, No 1, pp.139–155, August, 2007.
 24. (with G. Ge), "On the existence of partitionable skew Room frames," *Discrete Math.*, Vol. 307, No 22, pp.2786–2807, October, 2007.
 25. (with G. Ge), "Super-simple resolvable balanced incomplete block designs with block size 4 and index 2," *J. Combin. Des.*, Vol. 15, No 4, pp.341–356, June, 2007.

Refereed conference papers

1. Y. M. Chee, H. M. Kiah, S. Ling, T. T. Nguyen, V. K. Vu, and X. Zhang, "String concatenation construction for Chebyshev permutation channel codes," in *ISIT 2016 – Proceedings of the 2016 International Symposium on Information Theory*, to appear (accepted April 2016).

2. Y. M. Chee, V. K. Vu, and X. Zhang, "Permutation codes correcting a single burst deletion I: unstable deletions," in ISIT 2015 – Proceedings of the 2015 IEEE International Symposium on Information Theory, pp. 1741–1745, 2015.
3. Y. M. Chee, Y. Li, and X. Zhang, "Spectrum of sizes for perfect burst deletion-correcting codes," in ISIT 2015 – Proceedings of the 2015 IEEE International Symposium on Information Theory, pp. 1931–1935, 2015.
4. Y. M. Chee, F. Gao, H. M. Kiah, A. C. H. Ling, H. Zhang, and X. Zhang, "Decompositions of edge-colored digraphs: a new technique in the construction of constant-weight codes and related families," in ISIT 2014 – Proceedings of the 2014 IEEE International Symposium on Information Theory, pp. 1436–1440, 2014.
5. Y. M. Chee, H. Zhang, and X. Zhang, "Complexity of dependencies in bounded domains, Armstrong codes, and generalizations," in ISIT 2013 – Proceedings of the 2013 IEEE International Symposium on Information Theory, pp. 499–503, 2013.
6. Y. M. Chee, H. M. Kiah, H. Zhang, and X. Zhang, "Optimal codes in the Enomoto-Katona space," in ISIT 2013 – Proceedings of the 2013 IEEE International Symposium on Information Theory, pp. 321–325, 2013.

Talks

1. "Introduction to combinatorial designs theory and its applications in coding theory ", GAP Seminar @ USTC, , Hefei, China, May, 2016.
2. "Transversals of Latin squares", Workshop on Combinatorial Designs and Coding Theory, Hefei, China, May, 2016.
3. "Existence of Retransmission Permutation Arrays", GTC 2016 - Workshop on Graph Theory and Combinatorics of Yangtze Delta, Nanjing, China, April, 2016.
4. "Transversals of Latin squares and covering radius of sets of permutation", Dalian University of Technology, Dalian, China, September, 2015.
5. "Spectrum of sizes for perfect burst deletion-correcting codes", Proceedings of the 2015 IEEE International Symposium on Information Theory, Hong Kong, June, 2015.
6. "Multiply constant-weight codes", 2015 International Workshop on Graphs and Combinatorics, Hefei, China, May, 2015.
7. "Enomoto-Katona codes and Armstrong codes from relational database systems", the Sixth Combinatorics and Graph Theory National Conference, Guangzhou, China, November, 2014.
8. "The alpha-arboricity of complete uniform hypergraphs", University of Science and Technology of China, Hefei, China, December, 2012.
9. "Constructions of frameproof Codes", Nanyang Technological University, Singapore, November, 2012.
10. "The α -arboricity of complete uniform hypergraphs", The 35th Australasian Conference on Combinatorial Mathematics and Combinatorial Computing, Melbourne, Australia, December, 2011. (also participated as session Chair)
11. "Maximal resolvable packings and minimal resolvable coverings of triples by quadruples," the Sixth Shanghai Conference on Combinatorics, Shanghai, China, June, 2008.

Professional service

Referee I have served as a referee for the following journals:

1. Journal of Combinatorial Theory, Series A
2. European Journal of Combinatorics
3. Journal of Combinatorial Designs
4. Discrete Mathematics
5. Graphs and Combinatorics
6. Designs, Codes and Cryptography

7. Journal of Combinatorial Mathematics and Combinatorial Computing
8. Advances in Mathematics of Communications
9. The Electronic Journal of Combinatorics

Reviewer I have served on the panel of reviewers for:

1. Mathematical Reviews (2010-)

Membership Associate Fellow of ICA (The Institute of Combinatorics and Its Applications) (2016-)

Teaching

Nanyang Technological University, Singapore

Spring 2015 Tutor for MH1801, Calculus for the Sciences II

Fall 2014 Tutor for MH1200, Linear Algebra I

Spring 2011 Tutor for MTH115, Linear Algebra II

Spring 2010 Tutor for MAS182, Calculus for the Sciences II