Geyang Wang

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Education

Southern University of Science and Technology, China, *M. Eng.* 2019.9 - 2022.6 (expected)
- **Major**: Computer Science and Engineering
- **Supervisor**: Prof. Qi Wang

Southern University of Science and Technology, China, *B. Eng.* 2015.9 - 2019.6
- **Major**: Computer Science and Engineering
- **GPA** 3.67/4.0, Rank: 14/108

Research Projects

Joint Radar Communication Sequence Design - Cooperation with *Huawei* 2020.9 - now
- This project aims to design dual-function digital signals (sequences) that suitable for joint radar and communication systems. I surveyed on known results about sequence sets with low ambiguity function values.

Non-overlapping Codes for DNA Storage - Master Thesis 2020.10 - now
- This project aims to study the non-overlapping codes (cross-bifix-free codes) that used in DNA storage system.
- Find a simple way to generalize non-overlapping binary codes to q-ary; use generating functions to analyze the cardinalities of constructed non-overlapping codes; solve an open problem proposed by Bilotta (see publication 2).

Codes for Insertion/Deletion Channel 2021.10 - now
- Study the size distribution of Levenshtein ball (deletion-insertion sphere).

Publications

1. **Geyang Wang** and Qi Wang: "On the size distribution of Levenshtein balls with radius one", submitted to the *12th International Workshop on Coding and Cryptography (WCC 2022)*.
2. **Geyang Wang** and Qi Wang: "Q-ary non-overlapping codes: a generating function approach," submitted to ***IEEE transactions on Information Theory***, under minor revision, (arXiv:2108.06934).
3. **Geyang Wang** and Qi Wang: "An OACF-preserving operation based on Parker' s transformation," in *9th International Workshop on Signal Design and its Applications in Communications (IWSDA)*, Dongguan, China, 2019.

Awards

Graduate Student Scholarship, SUSTech 2019 - now

1^{st} Prize in South Central China, National Crypto-Math Contest 2019, 2020

Outstanding Graduate of Residential College, SUSTech 2019

Outstanding student at *Cryptography and math summer school*, with Ph.D. Offer, University of Chinese Academy of Sciences 2018
- Held by the state key laboratory of information security, and University of Chinese Academy of Sciences (UCAS);

Undergraduate Student Scholarship, SUSTech 2016 - 2019

Mathematical Background

- **Related Courses**: *Linear Algebra*, *Calculates*, *Complex Analysis*, *Abstract Algebra*, *Discrete Mathematics*, *Probabilistic Theory*, *Mathematical Statistics*, *Combinatorics*, *Cryptography*, *Information Theory and Coding*
- **Self-studied textbooks**:
  - R. Lidl, and H. Niederreiter *Finite Fields*. Cambridge university press, 1997
  - Z X. Wan *Lectures on finite fields and Galois rings*. World Scientific Publishing Company, 2003.
  - N. Alon, and J.H. Spencer. *The probabilistic method*. John Wiley & Sons, 2016.
  - W C. Huffman, and V. Pless *Fundamentals of error-correcting codes*. Cambridge university press, 2010.

Skills

- **Programming Languages**: *Java*, *Python*.
- **Tools**: *LaTex*, *Magma*.
- **Languages**: Chinese (native); English, (fluent, TOEFL 103).