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Combinatorics Laboratory

Education

Combinatorics

Communication Networks

Ph. D., Applied Mathematics, National Chiao Tung University, R.O.C.(Taiwan)

Publications

1.1 Journal Papers (In recent 5 years)

- 1.1.1 S.-P. Eu, T.-S. Fu, H.-H. Lai, Y.-H. Lo*, Gamma-positivity for a refinement of median Genocchi numbers, *Electronic Journal of Combinatorics*, 29(2) (2022) #2.15.
- 1.1.2 S.-P. Eu, T.-S. Fu, Y.-H. Lo*, Signed Mahonian on parabolic quotients of colored permutation groups, *Advances in Applied Mathematics*, 132 (2022) 102269.
- 1.1.3 Y.-H. Lo, K. W. Shum*, W. S. Wong, Y. Zhang, Multichannel conflict-avoiding codes of weights three and four, *IEEE Transactions on Information Theory*, 67(6) (2021) 3557-3568.
- 1.1.4 H. Chang, S.-P. Eu, S. Fu, Z. Lin, Y.-H. Lo*, Signed Mahonian polynomials for major and sorting indices, *Journal of Algebraic Combinatorics*, 53 (2021) 201-226.
- 1.1.5 Y.-P. Chen*, Y.-H. Lo, F. Lai, C.-H. Huang, Disease concept-embedding based on the self-supervised method for medical experience extractor of electronic health records and disease retrieval: algorithm development and validation study, *Journal of Medical Internet Research*, 23(1) (2021) e25113.
- 1.1.6 S.-P. Eu, Z. Lin, Y.-H. Lo*, Signed Euler-Mahonian identities, *European Journal of Combinatorics*, 91 (2021) 103209.
- 1.1.7 Y.-H. Lo*, H.-L. Fu, W. S. Wong, Y. Zhang, The undirected optical indices of complete m -ary trees, *Discrete Applied Mathematics*, 285 (2020) 173-181.
- 1.1.8 Y. Zhang*, Y. Chen, Y.-H. Lo, W. S. Wong, Achieving zero-packet-loss throughput 1 for a collision channel without feedback and with arbitrary time offsets, *IEEE Transactions on Information Theory*, 66(4) (2020) 2269-2279.
- 1.1.9 Y. Zhang*, A. Gong, Y.-H. Lo, J. Li, F. Shu, W. S. Wong, Generalized p -persistent CSMA for asynchronous multiple-packet reception, *IEEE Transactions on Communications*, 67(10) (2019) 6966-6979.

- 1.1.10 Y. Zhang*, Y.-H. Lo, F. Shu, J. Li, Achieving maximum reliability in deadline-constrained random access with multiple-packet reception, *IEEE Transactions on Vehicular Technology*, 68(6) (2019) 5997-6008.
- 1.1.11 Y. Zhang*, Y.-H. Lo, L. Lu, F. Shu, W. S. Wong, Protocol sequences for asynchronous multiple access with physical-layer network coding, *IEEE Wireless Communications Letters*, 8(4) (2019) 980-983.
- 1.1.12 Y. Zhang*, F. Guan, Y.-H. Lo, F. Shu, J. Li, Optimal multichannel slotted ALOHA for deadline-constrained unicast systems, *IEEE Systems Journal*, 13(2) (2019) 1308-1311.
- 1.1.13 Y. Zhang, Y.-H. Lo*, K. W. Shum, W. S. Wong, New CRT sequence sets for a collision channel without feedback, *Wireless Networks*, 25(4) (2019) 1697-1709.
- 1.1.14 H.-L. Fu, Y.-H. Lo, K. E. Perry*, C. Rodger, On the number of rainbow spanning trees in edge-colored complete graphs, *Discrete Mathematics*, 341 (2018) 2343-2352.
- 1.1.15 Y. Zhang*, F. Guan, Y.-H. Lo, Coding-based slotted ALOHA for broadcasting multislot messages with delivery deadline, *IEEE Transactions on Vehicular Technology*, 67(8) (2018) 7882-7886.
- 1.1.16 Y. Zhang*, M. Zhang, Y.-H. Lo, W. S. Wong, Protocol sequences with carrier sensing for wireless sensor networks, *IEEE Internet of Things Journal*, 5(2) (2018) 905-916.
- 1.1.17 Y. Chen, Y.-H. Lo, K. W. Shum, W. S. Wong, Y. Zhang, CRT sequences with applications to collision channels allowing successive interference cancellation, *IEEE Transactions on Information Theory*, 63(4) (2018) 2910-2923
- 1.1.18 Y. Zhang*, Y.-H. Lo, W. S. Wong, On the channel hopping sequences with full rendezvous diversity for cognitive radio, *IEEE Wireless Communication Letters*, 7(4) (2018) 574-577.
- 1.2 Conference Papers (In recent 5 years)
- 1.2.1 Y.-H. Lo*, W.-W. Gu, Y. Zhang, New results on optimal multichannel conflict-avoiding codes, *IEEE International Symposium on Information Theory*, Melbourne, Australia, (2021) 3086-3091.
- 1.2.2 S. Wang*, J. Luo, Y.-H. Lo and W. S. Wong, Forwarding and optical indices in an all-optical BCube network, *IEEE 37th International Performance Computing and Communications Conference*, Orlando, Florida, USA, (2018).

Academic Projects

2.1 MOST

- 2.1.1 The study on the joint-distributions of statistics over permutations and the study on the Hamming cross-correlation functions of multivariate protocol sequences. (MOST 108-2115-M-153-004-MY2; Execution duration: 2019/10/01 ~ 2021/07/31) [PI]
- 2.1.2 The study on the permutation statistics over complex reflection groups and the study on the combinatorial objects of protocol sequences. (MOST 110-2115-M-153-004-MY2; Execution duration: 2021/08/01 ~ 2023/07/31) [PI]

2.2 MOE

2.3 Others

- 2.3.1 Combinatorics and its applications: the study on (1) statistics over permutation groups and (2) Hamming cross-correlations of protocol sequences. (National Natural Science Foundation NSF 11601454; Execution duration: 2017/01/01 ~ 2019/07/31) [PI]

Relevant Experience

3.1 Academic Experience

3.1.1 Associate Professor

- 3.1.1.1 Department of Applied Mathematics, National Pingtung University, R.O.C.(Taiwan).
(2020/08/01 ~ Present)
- 3.1.1.2 School of Mathematical Sciences, Xiamen University, China. (2017/11/01 ~ 2019/07/31)

3.1.2 Assistant Professor

- 3.1.2.1 Department of Applied Mathematics, National Pingtung University, R.O.C.(Taiwan).
(2019/08/01 ~ 2020/07/31)
- 3.1.2.2 School of Mathematical Sciences, Xiamen University, China. (2015/09/01 ~ 2017/10/31)

3.1.3 Postdoctoral.

- 3.1.3.1 Department of Mathematics, National Taiwan Normal University, R.O.C.(Taiwan).
(2013/08/01 ~ 2015/07/31)
- 3.1.3.2 Department of Applied Mathematics, National University of Kaohsiung, R.O.C.(Taiwan). (2012/08/01 ~ 2013/07/31)
- 3.1.3.3 Department of Applied Mathematics, National Chiao Tung University, R.O.C.(Taiwan).
(2011/08/01 ~ 2012/07/31)

3.2 Teaching Experience

3.3 Others