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- Google Scholar Profile: <https://scholar.google.com/citations?user=knMcKpIAAAAJ&hl=en>

**Academic Qualifications:**

- Postdoctoral Follow in Design of Experiments, Beijing Normal University-Hong Kong Baptist University, United International College, China
- PhD in Design of Experiments, Central China Normal University, China
- MPhil in Order Statistics, Zagazig University, Egypt
- BSc (Hons) in Mathematics and Statistics, Zagazig University, Egypt.

**Working Qualifications:**

- February 2018-Now: Assistant Professor at UIC.
- March 2016- February 2018: Lecturer at UIC.
- July 2007-September 2013: Teaching Assistant and Lecturer at Zagazig University, Egypt.

**Research Areas**

- Design of Experiments
- Computer Experiments
- Statistical Simulation
- Multivariate Analysis
- Order Statistics

**On-going Research:**

This indicates my research plan for the coming couple of years.

- Constructing Optimal Space-Filling Designs
- Minimum Energy Points with Applications
- Representative Points with Applications

**Research Projects/Grant**

- “Representative Points of Statistical Distributions in Statistical Inference” UIC Research Grant R202010(CoI, 2020-2022)
- “Answers to Some Significant Open Questions in Experimental Designs” UIC Research Grant R201912 (PI, 2019-2021)
- “Solving Some Fundamental Problems Concerning the Construction of Designs for Experiments” UIC Research Grant R201810 (CoI, 2018-2020).

### **Professional and Academic Service:**

- Referee for various journals, including, IEEE/ACM Transactions on Computational Biology and Bioinformatics, Statistics in Medicine, Statistics, Statistical Papers, Engineering Reports, Statistics and Probability Letters, Statistical Planning and Inference, Journal of the Korean Statistical Society, Communications in Statistics - Theory and Methods, Communications in Statistics - Simulation and Computation.
- Reviewer for Mathematical Reviews, 2016-present.

### **Courses Taught Recently at UIC from 2016-Now**

- Calculus I&II
- Art of Data
- Business Statistics
- Advanced Statistics
- Speaking of Statistics
- Design of Experiments
- Fundamental Mathematics for Economics and Business

### **Subjects Taught in the Past at Zagazig University from 2007-2013**

Summarized by subject content rather than by code and title

- Statistics Subjects: Time Series, Order Statistics, Stochastic Process, Regression Analysis, Multivariate Analysis, Advanced Probability, Advanced Statistics, Statistical Inference, Design of Experiments, Mathematical Statistics
- Mathematics Subjects: Calculus, Numerical Analysis, Differential Equations, Mathematical Modelling, Complexity of Numerical Problems, Numerical Partial Differential Equations, Real Analysis, Linear Algebra
- Laboratory Subjects: Computer laboratories in mathematical and statistical software such as LaTeX, MATLAB and SPSS for undergraduate and graduate students.

### **Selected Publications:**

1. Elsayah, A.M., 2020. Building some bridges among various experimental designs. J. Korean Statistical Society 49, 55–81.
2. Elsayah, A.M. (with Wang and Sun) 2020. Improving MF-DFA model with applications in precious metals market. <https://arxiv.org/abs/2006.15214>
3. Elsayah, A.M. (with Fang) 2020. New foundations for designing U-optimal follow-up experiments with flexible levels. Stat. Papers 61 (2), 823–849.
4. Elsayah, A.M., 2020. Multiple doubling of experimental designs. Stat. Papers. Accepted.
5. Elsayah, A.M. (with Vishwakarma and Paul), 2020. Algorithm for outlier detection in time series model using backpropagation neural network. J. King Saud University –Science. Accepted.
6. Elsayah, A.M. (with Weng and Fang) 2020. An in-depth look at fold-over technique. J. Systems Science and Complexity. Accepted.
7. Elsayah, A. M., 2019. Constructing optimal router bit life sequential experimental designs: new results with a case study. Commun Stat Simul Comput. 48 (3), 723-752.
8. Elsayah, A.M., 2019. Designing Uniform Computer Sequential Experiments with Mixture Levels Using Lee Discrepancy. J. Systems Science and Complexity 32 (2), 681–708.
9. Elsayah, A.M., Y. Tang, Fang, K.T., 2019. Constructing optimal projection designs. Statistics 53 (6), 1357-1385
10. Elsayah, A.M., Fang, K.T. and Deng, Y.H., 2019. Some interesting behaviors of good lattice point sets. Commun Stat Simul Comput. <https://www.tandfonline.com/doi/abs/10.1080/03610918.2019.1628988>



11. Elsayah, A.M., Fang, K.T. and Ke, X., 2019. New recommended designs for screening either qualitative or quantitative factors. *Stat. Papers*. <https://link.springer.com/article/10.1007/s00362-019-01089-9>
12. Elsayah, A.M. and Fang, K.T., 2019. A catalog of optimal foldover plans for constructing U-uniform minimum aberration four-level combined designs. *J. Applied Statistics* 46 (7), 1288-1322.
13. Elsayah, A.M., Fang, K.T., He, P. and Qin, H., 2019. Optimum Addition of Information to Computer Experiments in View of Uniformity and Orthogonality. *Bulletin of the Malaysian Mathematical Sciences Society* 42 (2), 803–826,
14. Elsayah, A.M., Fang, K.T., He, P. and Qin, H., 2019. Sharp lower bounds of various uniformity criteria for constructing uniform designs. *Stat. Papers*. <https://link.springer.com/article/10.1007/s00362-019-01143-6>
15. Elsayah, A.M., 2018. Choice of optimal second stage designs in two-stage experiments. *Comput. Stat.* 33(2), 933-965.
16. Elsayah, A.M. and Fang, K.T., 2018. New results on quaternary codes and their Gray map images for constructing uniform designs. *Metrika* 81(3), 307-336.
17. Elsayah, A. M., Essawe, F. and Zhao, H., 2018. Asymptotic Theory of Dual Generalized Order Statistics from Heterogeneous Population. *J. the Indian Society for Prob. and Stat.* 19 (2), 359-377.
18. Elsayah, A. M., Vishwakarma, G.K. and Tan, Z., 2018. Extreme value theory of mixture generalized order statistics. *ProbStat Forum* 11 (3), 104–116
19. Elsayah, A.M., 2017. A closer look at de-aliasing effects using an efficient foldover technique. *Statistics* 51 (3), 532-557.
20. Elsayah, A.M., 2017. A powerful and efficient algorithm for breaking the links between aliased effects in asymmetric designs. *Australian & New Zealand Journal of Statistics* 59 (1), 17-41.
21. Elsayah, A. M. and Qin, H., 2017. Optimum mechanism for breaking the confounding effects of mixed-level designs. *Computational Statistics* 32 (2), 781-802.
22. Elsayah, A. M. (with Fang and Ke), 2017. Construction of uniform designs via an adjusted threshold-accepting algorithm. *Journal of Complexity* 43, 28-37
23. Elsayah, A. M. (with Alawady, Hu and Qin), 2017. Asymptotic random extremal ratio and product based on generalized order statistics and its dual. *Communi. Statist. Theory Methods* 46(18) 8881-8896.
24. Elsayah, A. M., Hu J. and Qin, H., 2017. Effective lower bounds of wrap-around L2-discrepancy on three-level combined designs. *J. Systems Science and Complexity* 30 (6), 1459–1469.
25. Elsayah, A.M., 2016. Constructing optimal asymmetric combined designs via Lee discrepancy. *Statistics & Probability Letters* 118, 24-31.
26. Elsayah, A.M. (with Alawady, Abdelgawad and Qin), 2016. A note on optimal foldover four-level factorials. *Acta Mathematica Sinica, English Series* 32 (3), 286-296
27. Elsayah, A. M. and Qin, H., 2016. An effective approach for the optimum addition of runs to three-level uniform designs. *J. Korean Statistical Society* 45 (4), 610-622.
28. Elsayah, A. M. and Qin, H., 2016. Asymmetric uniform designs based on mixture discrepancy. *Journal of Applied Statistics* 43 (12), 2280-2294.
29. Elsayah, A. M. and Qin, H., 2016. An efficient methodology for constructing optimal foldover designs in terms of mixture discrepancy. *J. Korean Statistical Society* 45 (1), 77-88.
30. Elsayah, A. M. (with Alawady, Hu and Qin), 2016. Asymptotic behavior of non-identical multivariate mixture. *ProbStat Forum*, 09, 95-104.
31. Elsayah, A. M. (with Barakat and Nigm), 2016. Asymptotic distribution of the ratio of the symmetric differences of generalized order statistics. *J. Indian Statistical Association* 54 (1), 1-10
32. Elsayah, A. M. and Qin, H., 2015. A new strategy for optimal foldover two-level designs. *Statist. Probab. Lett.* 103, 116–126.
33. Elsayah, A. M. and Qin H., 2015. Mixture discrepancy on symmetric balanced designs. *Statist. Probab. Lett.* 104, 123–132.
34. Elsayah, A. M. and Qin, H., 2015. Lower bound of centered L2-discrepancy for mixed two and three levels U-type designs. *J. Statist. Plann. Inference* 161, 1-11.
35. Elsayah, A. M. and Qin, H., 2015. Lee discrepancy on symmetric three-level combined designs.



- Statist. Probab. Lett. 96, 273-280.
36. Elsawah, A. M. (with Barakat and Nigm), 2015. Asymptotic distributions of the generalized range, midrange, extremal quotient and extremal product, with a comparison study. *Communi. Statist. Theory Methods* 44: 900-913.
  37. Elsawah, A. M. (with Barakat and Nigm), 2015. On asymptotic behavior of some record functions. *ProbStat Forum* 08, 124-129.
  38. Elsawah, A. M. (with Barakat and Nigm), 2014. Asymptotic distributions of the generalized and the dual generalized extremal quotient. *Bulletin of the Malaysian Mathematical Sciences Society* 36 (3), 657-670
  39. Elsawah, A. M. and Qin, H., 2014. New lower bound for centered L2-discrepancy of four-level U-type designs. *Statist. Probab. Lett.* 93, 65-71.