

Kashinath Chatterjee

Professor, Department of Statistics
Visva-Bharati University
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Personal Data

- Place of Birth: Calcutta, India
- Date of Birth: May 1, 1955
- Current Employer: Visva-Bharati University
Founded by Rabindranath Tagore

Education

- **Indian Statistical Institute** Calcutta, India
Ph.D. Statistics 1990
 - Thesis: Search Designs and Other Topics in Fractional Replication
 - Advisor: Professor Rahul Mukerjee, IIM Kolkata
- **Indian Statistical Institute** Calcutta, India
M.Stat. 1978
 - Statistical Quality Control and Operations Research
- **Asutosh College** Calcutta, India
B.Sc. Statistics 1975
 - Graduated with a Major in Statistics and a Minor in Mathematics and Economics

Awards, Grants & Honours

Rank first at M.Stat. Examination in the SQC and OR group
Rank third at the B.Sc. Examination in order of merit

Teaching Experience

- **Department of Statistics** Asutosh College, Calcutta, India
Assistant Professor Nov. 1979 - 1992
- **Department of Statistics** Asutosh College, Calcutta, India
Associate Professor Nov. 1992 - 2002

- **Department of Mathematical Sciences** University of Memphis, USA
Visiting Assistant Professor 1996 - 1997
- **Department of Statistics** Visva-Bharati University, India
Professor Nov. 2002 - Present
- **Department of Mathematics** Indian Institute of Technology, Kharagpur, India
Adjunct Professor 2009 - 2010
- **Department of Statistics** Purdue University, USA
Visiting Professor 2011 - 2012

Courses Taught

- **Department of Statistics, Asutosh College**
Under-Graduate
 - Descriptive Statistics
 - Mathematical Probability
 - Statistical Inference
 - Design of Experiments
 - Linear Algebra
- **Department of Statistics, Visva-Bharati University**
Post-Graduate
 - Design of Experiments
 - Reliability and Survival Analysis
 - Linear Models and Regression Analysis
 - Statistical Inference
 - Multivariate Analysis
 - Measure Theory and Probability
- *Under-Graduate*
 - Descriptive Statistics
 - Mathematical Probability
 - Statistical Inference
 - Design of Experiments
 - Linear Algebra
 - Real Analysis
- **Department of Mathematics, Indian Institute of Technology, Kharagpur, India**
Post-Graduate
 - Multivariate Analysis
- **Department of Statistics, Purdue University, USA**
Post-Graduate
 - STAT-501

Research Experience

- Pursuing research since 1984
- Attended the 53rd Session of the International Statistical Institute held in Seoul, Korea (August, 2001) with financial support from Government of India.
- Delivered an invited talk at the Session on Design and Analysis of Experiments at the International Conference on Advances in Interdisciplinary Statistics and Combinatorics (AISC 2012) held at the University of North Carolina, Greensboro during October 5-7, 2012.
- Participated and presented a paper at the International Conference on Design and Analysis of Experiments, Organized by the Department of Statistics, University of Georgia at Athens, Georgia during October 17-20.
- Delivered a talk on Design of Experiments at the Probability and Statistics Seminar held at Georgia Southern University, Statesboro, GA, on October 26, 2012.

Research Interest

- **Design of Experiments and Related Combinatorics**
 - Search Designs
 - Supersaturated Designs
 - Uniform Designs
 - Optimality of Designs
- **Clinical Trials**
- **Microarray Experiments**
- **Application of Design of Experiments in Reliability Theory**

Academic Visits Abroad

- **Visiting** *Assistant Professor* Department of Mathematical Sciences
University of Memphis, USA, 1996 - 1997
- **Visiting Scientist** Department of Mathematical Sciences
Hong Kong Baptist University, Oct 2001 - Dec 2001
- **Visiting Scientist** Academia Sinica Taiwan, Taipei
Oct 1, 2006 - Oct 31, 2006

- Visiting Scientist Department of Statistics CCNU, Wuhan, China
May 17, 2007 - May 31, 2007
- Visiting Scientist Academia Sinica Taiwan, Taipei
June 1, 2007 - June 30, 2007
- Visiting Scientist Department of Statistics CCNU, Wuhan, China
October 1, 2008 - October 14, 2008
- Visiting Scientist Department of Statistics SNU, Shanghai, China
October 15, 2008 - October 23, 2008
- Visiting Scientist Department of Statistics CCNU, Wuhan, China
October 15, 2009 - October 7, 2009
- Visiting Scientist Department of Statistics SNU, Shanghai, China
October 7, 2009 - October 15, 2009
- Visiting Scientist Department of Statistics CCNU, Wuhan, China
May 17, 2010 - May 28, 2010
- Visiting Scientist Department of Statistics SNU, Shanghai, China
May 28, 2010 - June 2, 2010
- Visiting Professor Department of Statistics, Purdue University, USA,
2011 - 2012
- Visiting Scientist Department of Statistics CCNU, Wuhan, China
May 17, 2012 - May 26, 2012
- Visiting Scientist Department of Statistics SNU, Shanghai, China
May 26, 2012 - June 5, 2012
- Visiting Scientist Department of Statistics BJTU, Beijing, China
June 5, 2012 - June 11, 2012
- Visiting Scientist Department of Statistics, University of Georgia, USA
October 10, 2012 - October 25, 2012

Editorial and Related Service

- Refereed papers for numerous journals including Annals of Statistics; Biometrika; Journal of Statistical Planning and Inference; Metrika; Statistics and Probability Letters; Chinese Academy of Sciences; Communications in Statistics; Calcutta Statistical Association Bulletin; Journal of Indian Society of Agricultural Statistics

Research Publications

● Published/Accepted in Refereed Journals

1. Xin, Liu, Yue, Rong-Xian and Chatterjee, K. (2014). *R*-optimal designs in random coefficient regression models. *Statistics and Probability Letters*, 88, 127132.

2. A Comparative Study on Antioxidant Potentials of Some Leafy Vegetables Consumed Widely in India. *Journal of Food Biochemistry*. (17 DEC 2013, DOI: 10.1111/jfbc.12062)
3. Xin, Liu, Yue, Rong-Xian and Chatterjee, K. (2014). A note on R-optimal designs for multi-factor models. *Journal of Statistical Planning and Inference*, 146, 139144.
4. Yue, Rong-Xian, Xin, Liu and Chatterjee, K. (2014). D-optimal Designs for Multiresponse Linear Models With a Qualitative Factor. *Journal of Multivariate Analysis*, 124, 57-69.
5. Chatterjee, K. and Dey, A. (2013). Choice Experiments for Estimating Main Effects and Selected Interaction Effects. Indian Statistical Institute Technical Report-September, 2013.
6. Angelopoulos, P., Koukouvinos, C. and Chatterjee, K. (2013). A lower bound to the measure of optimality for main effect plans in the general asymmetric factorial experiments. *Statistics*, 47, 2, 405-410.
7. Koukouvinos, C, Chatterjee, K. and Angelopoulos, P. (2013). Construction of Search Designs from Orthogonal Arrays. *Journal Stat. Theory and Practice*. 7, 774-782.
8. Qin, H., Sarkar, A. and Chatterjee, K. (2013). Designs for searching two two-factor and one three-factor interaction effect under the tree structure. *Calcutta Statistical Association Bulletin*. (To appear)
9. Zujun, Ou, Qin., H. and Chatterjee, K. (2013). A Lower Bound for the Centered L_2 -discrepancy on Combined Designs Under the Asymmetric Factorials. *Statistics*. 47, 5, 992-1002.
10. Chatterjee, K., Li, Z. and Qin, H. (2012). Some new lower bounds to centered and wrap-around L_2 -discrepancy. *Statistics and Probability Letters*, 82, 1367-1373.
11. Gupta, V. K., Chatterjee, K., Das, A. and Kole, B. (2012). Addition of runs to an s -level supersaturated design. *Journal of Statistical Planning and Inference*. 142, 2402-2408.
12. Chatterjee, K., Qin, H. and Zou, N. (2012). Lee discrepancy on asymmetrical factorials with two- and three-levels. *Science China Mathematics*, 55, 3, 663-670.
13. Chatterjee, K. Koukouvinos, C, Mantas P. and Skountzou, A. (2012). A general construction of $E(f_{NOD})$ -optimal multi-level supersaturated designs. *J. Statist. Plann. Inf.*, 142, 1092-1107.
14. Qin, H., Wang, Z and Chatterjee, K. (2012). Uniformity pattern and related criteria for s -level factorials. *J. Statist. Plann. Inf.*, 142, 5, 1170-1177.
15. Chai, F. S., Chatterjee, K., Das, A. and Midha, C.. (2012). Optimal Supersaturated Designs for s^m Factorials in $N \not\equiv 0 \pmod{s}$ Runs. *Journal of Statistical Theory and Practice*. 6, 1, 169-177
16. Chatterjee, K. and Koukouvinos, C. (2011). A New Look at Search Designs. *Sankhya, Ser B*, 73, 211-217.
17. Chatterjee, K, Datta, N. K. and Ghosh, M. (2011). Excitations in doped quantum dot driven by periodically actuating impurity domain. *Journal of Applied Physics*, 109, 104-110.
18. Datta, N. K., Chatterjee, K. and Ghosh, M. (2011). Excitations in doped quantum dot driven by linear and non-linear drift of impurity. *Solid State Sciences*, 13, 1531-1537.

19. Chatterjee, K. and Qin, H. (2011). Generalized Discrete Discrepancy and its Application. *J. Statist. Plann. Inf.*, 141, 2, 951-960.
20. Yue, Rong-Xian, Qin, H. and Chatterjee, K. (2011). Optimal U-type Design for Bayesian Nonparametric Multiresponse Prediction. *J. Statist. Plann. Inf.*, 141, 7, 2472-2479.
21. Chatterjee, K., Koukouvinos, C., and Mylona, K. (2011). A New Lower Bound to A_2 -optimality Measure for Multi-level and Mixed-level Column balanced Designs and its Applications. *J. Statist. Plann. Inf.*, 141, 877-888.
22. Zujun, Ou., Chatterjee, K. and Qin, H. (2011). Lower Bounds of Various Discrepancies on Combined Designs. *Metrika* 74, 1, 109-119.
23. Chatterjee, K., Kolyva-Machera, F. and Chatzopoulos, S. A. (2010). Type 1 optimal 2^m fractional factorial plans with $n \equiv (\text{mod } 8)$ runs, $m = 1, 2$. *Journal of Korean Statistical Society*. 40, 4, 451-455.
24. Chatterjee, K., Evangelaras, H. and Koukouvinos, C. (2010). A Lower Bound to the Measure of Optimality for Main effect Plans in the Symmetric Factorial Experiments. *Commun. Statist. Theory Meth.* 40, 2358-2365.
25. Ananta Sarkar, Rajender Parsad, V.K. Gupta, Kashinath Chatterjee and Abhishek Rathore (2010). Efficient row-column designs for microarray experiments. *Journal of Indian Society of Agricultural Statistics*. 64(1), 89-117.
26. Qin, H., Chatterjee, K. and Zujun, Ou. (2010). A Lower Bound for the Centered L_2 -discrepancy on Combined Designs Under the Asymmetric Factorials. *Statistics*, DOI:10.1080/02331888.2011.652966
27. Sarkar, A. and Chatterjee, K. (2010). An MEP.2 Plan in 3^n Factorial Experiment and Its Probability of Correct Identification. *J. Statist. Plann. Inf.*, 140, 11, 3531-3539.
28. Chatterjee, K. and Dey, A. (2010). A Class of Saturated Row-Column Designs. *Indian Journal of Pure and Applied Mathematics*. 41, 1, 293-302
29. Chatzopoulos, S. A., Kolyva-Machera, F. and Chatterjee, K. (2010). Optimality Results on Orthogonal Arrays Plus p Runs for s^m Factorial Experiments. *Metrika* 73, 3, 385-394.
30. Yue, Rong-Xian and Chatterjee, K. (2010). Bayesian U-type Design for Nonparametric Response Surface Prediction. *Metrika*, 2010, 72, 2, 219-231.
31. Qin, H., Zou, N. and Chatterjee, K. (2009). Connection Between Uniformity and Minimum Moment Aberration, *Metrika*, 70, 1, 79-88.
32. Qin, H. and Chatterjee, K. (2009). Lower Bounds Of Uniformity Pattern In Asymmetric Fractional Factorials. *Commun. Statist. Theory Meth.*, 38, 1383-1392.
33. Sarkar, A., Lin, D. K. J. and Chatterjee, K. (2009). Probability of Correct Model Identification in Supersaturated Design. *Statist. Probab. Letters*, 79, 1224-1230.
34. Chai, F. S., Chatterjee, K. and Gupta, S. (2009). Generalized $E(s^2)$ criterion for multilevel supersaturated designs. *Commun. Statist. Theory Meth.*, 38, 3725 - 3735.
35. Chatterjee, K., Gupta, S. and Sarkar, A. (2008). On Searching Probability of Two-factor Interaction. *Statistics and Applications*, 6, 109-122.
36. Chatterjee, K. and Qin, H. (2008). A New Look On Discrete Discrepancy. *Statist. Probab. Letters* 78, 17, 2988-2991
37. Qin, H. and Chatterjee, K. (2008). Minimum Projection Uniformity in Asymmetric Fractional Factorials. *Metrika* (to appear).

38. Das, A., Dey, A, Chan, L. Y., and Chatterjee, K. (2008). On $E(s^2)$ - optimal supersaturated designs, *J. Statist. Plann. Inf.*, 138, 3749 - 3757
39. Chatterjee, K., Sarkar, A. and Lin, D. K. J. (2008). Supersaturated Design With High Searching Probability, *J. Statist. Plann. Inf.*, 138, 272-277
40. Hong, W. Z., Qin, H., and Chatterjee, K. (2007). Lower Bounds for the Symmetric L2-discrepancy and their Application, *Commun. Statist. Theory Meth.*, 36, 2413-2423
41. Chatterjee, K., Fang, K. T. and Qin, H. (2006). A Lower Bound for Centered L2-discrepancy on Asymmetric Factorials and its Application, *Metrika*, 63, 243-255
42. Chatterjee, K., Fang, K. T. and Qin, H. (2005). Uniformity in Factorial Designs with Mixed Levels, *J. Statist. Plann. Inf.*, 128, 593-607
43. Chatterjee, K. and Fang, K. T. (2005). Mixed Level Dispersion Experiments, *Proceedings of the 5th International Triennial Calcutta Symposium on Probability and Statistics*, Calcutta Statist. Assoc. Bulletin, 56
44. Chatterjee, K and Gupta, S. (2003). Construction of Supersaturated Designs Involving s-level Factors. *J. Statist. Plann. Inf.*, 113, 589-595
45. Chatterjee, K, Das, A. and Dey, A. (2002). Quasi-Orthogonal Arrays and Optimal Fractional Factorial Plans. *Statistica Sinica* , 12, 905-916
46. Mukerjee, R, Dey, A. and Chatterjee, K. (2002). Optimal Main Effect Plans with Nonorthogonal Blocking. *Biometrika*, 89, 225-229
47. Chatterjee, K., Deng L. Y. and Lin, D. K. J. (2002) Two-level Search Design for Main-effect Plus Two Plan. *Metrika*, 54, 233 - 245
48. Chatterjee, K. and Narasimhan, G. (2002). Graph-theoretic techniques in D-optimal design problems. *J. Statist. Plann. Inf.*, 102, 377-387
49. Chatterjee, K., Choi, C. K., Das, A. and Gupta, S. (2002). Optimality of orthogonally blocked diallels with specific combining abilities, *Statist. Probab. Letters*, 57, 145-150
50. Chatterjee, K. and Bandyopadhyay, U. (2001). A balanced two-stage allocation design for normal response, *Statistics and Applications*, 3, 193-200
51. Chatterjee, K., Deng L. Y. and Lin, D. K. J. (2000) Resolution V.2 search designs. *Commun. Statist. Theory Meth.*, 29, 1143-1154
52. Gupta, S and Chatterjee, K. (1998). Supersaturated designs: A review. *Journal of Combinatorics, Information and System Sciences*, 23, 475-488
53. Chatterjee, K. (1998). Construction of a new series of search designs for sm factorial experiment. In *Frontiers in Probability and statistics*, (S. P. Mukherjee, S. K. Basu and B. K. Sinha Eds.), pp. 82-90, Narosa Publishing House
54. Mukerjee, R and Chatterjee, K. (1994). A search procedure using polychotomies for search linear models with positive error variance. *Statistics and Decisions*, 12, 91-103
55. Mukerjee, R and Chatterjee, K. (1993). An application of Hadamard matrices for the construction of main effect plus two plans for the 2^m factorials. *Utilitas Math.*, 45, 213-218
56. Chatterjee, K and Mukerjee, R. (1993). D-optimal saturated main effect plans for $2 \times s_2 \times s_3$ factorials. *Journal of Combinatorics, Information and System Sciences*, 18, 116-122.
57. Chatterjee, K. and Mukerjee, R. (1992). Search designs for searching several three-factor interactions in general factorials. *Utilitas Math.*, 42, 181-191

58. Chatterjee, K. (1991). Search designs for searching three-factor interaction effects in the general symmetric and asymmetric factorials. *Sankhya B*, 53, 304-324
59. Chatterjee, K. (1990). Search designs for searching for one among the two- and three-factor interaction effects in the general symmetric and asymmetric factorials. *Ann. Inst. Statist. Math.*, 42, 783-803
60. Chatterjee, K. (1989). Search designs for general symmetric factorials. *Commun. Statist. Theory Meth.*, 42., 19, 2189-2200
61. Chatterjee, K. and Mukerjee, R. (1986). Some search designs for symmetric and asym-metric factorials. *J. Statist. Plann. Inf.*, 13, 357-363
62. Chatterjee, K. and Mukerjee, R. (1986). Linear-trend-free orthogonal main-effect plans. *Rep. Statist. Appl. Res.*, Japanese Union of Scientists and Engineers, 33, 1-8.
63. Mukerjee, R., Chatterjee, K and Sen, M. (1986). D-optimality of a class of saturated main effect plans and allied results. *Statistics*, 17, 349-355.
64. Mukerjee, R and Chatterjee, K. (1985). Estimability and efficiency in proportional frequency plans. *J. Ind. Soc. Agric. Statist.*, 37, 79-87.

● Under Revision/Submitted

1. Gupta, V. K., Kole, B., Chatterjee, K. and Parsad, R. (2010). Construction of Optimal Multi-level Supersaturated Designs by Association Scheme. *Journal of Korean Statistical Society*. (under revision).
2. Chatterjee, K., Dey, A. and Fang, K. T. (2008). Search Designs Under a Tree Structure. (submitted)
3. Chai, F. S. and Chatterjee, K. (2008). E(s₂)-optimal supersaturated designs for 2-level factors based on Hadamard Matrices. (submitted)

● Other Publications

1. Chatterjee, K. and Fang, K. T. (2001). Search designs for searching one two-factor and three-factor interaction effects, Technical Report MATH-, Hong-Kong Baptist University (319)
2. Chatterjee, K and Fang, K. T. (2001) Mixed level dispersion experiments. Technical Report MATH-, Hong-Kong Baptist University (316)

Graduate Students

- PhD student from Visva-Bharati University: Sarkar, Angshuman.

Memberships

- **Indian Statistical Institute** *Dec. 1984 - present*
Life Member
- **Calcutta Statistical Association** *Dec. 1984 - present*
Life Member
- **Society of Statistics, Computer and Applications** *Dec. 2005 - present*
Life Member

Skills

- Programming Languages
 - **Intermediate: C**
- Specialized Software
 - **Expert: MATLAB**
 - **Intermediate: R, S-Plus**