

## **BOBY JOHN**

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### **Employment**

Technical Officer (Grade I), Statistical Quality Control & Operations Research Unit, Indian Statistical Institute, Bangalore.

### **Paper published in International Journals**

1. "Optimization of software development life cycle process to minimize the delivered defect density", *Opsearch*, Vol. 56, No. 4, pages: 1199-1212. <https://doi.org/10.1007/s12597-019-00414-y>.
2. "A modified control chart for monitoring non-normal characteristics", *International Journal of Productivity and Quality Management*, <https://doi.org/10.1504/IJPQM.2019.10019471>.
3. "A regression spline control chart for monitoring characteristics exhibiting nonlinear profile over time", *The TQM Journal*, Vol. 31, No. 3, pages: 507-522, 2019. <https://doi.org/10.1108/TQM-08-2018-0105>.
4. "An application of integrated EPC-SPC methodology for simultaneously monitoring multiple output characteristics", *International Journal of Quality and Reliability Management*, Vol. 36, No.5, pages: 669-68, 2019. <https://doi.org/10.1108/IJQRM-04-2018-0104>
5. "A fuzzy optimization approach for software reliability estimation", *International Journal of Business and System Research*, Vol. 13, No.2, pages: 259 – 273, 2019. <https://doi.org/10.1504/IJBSR.2019.098624>.
6. "Reduction of rework in bearing end plate using six sigma methodology: A case study", *Journal of Applied Research on Industrial Engineering*, Vol. 5, No.1, pages: 10 – 26, 2018.
7. "Designing software development process to optimize multiple output performance characteristics", *Software Quality Professional*, Vol. 19, No.4, pages: 16 – 24, 2017.
8. "A brief review of software reliability prediction models", *International Journal for Research in Applied Science & Engineering Technology*, Vol. 5, No. 4, pages: 990 - 997, 2017.
9. "Application of multistage process control methodology for software quality management", *Journal of Project Management*, Vol. 1, No. 2, pages: 55 - 66. 2016.
10. "A methodology for quantitatively managing the coding phase of software development process", *International Journal of Research in Engineering and Technology*, Vol.5, No.16, pages: 13 - 20. 2016
11. "Recent advancements in software quality management: A review", *Merit Research Journal of Business and Management*, Vol. 4, No.5, pages: 018 - 026. 2016
12. "A methodology for quantitatively managing the bug fixing process using Mahalanobis Taguchi system", *Management Science Letters*, Vol 5, No.12, pages: 1081 - 1090. 2015.
13. "A methodology for reducing bench strength in information technology companies", *Journal of Engineering, Project, and Production Management*, Vol. 5, No.2, pages: 91 – 97. 2015.
14. "A dual response surface optimization methodology for achieving uniform coating thickness in powder coating process", *International Journal of Industrial Engineering Computations*, Vol. 6, No.4, pages: 469 – 480. 2015
15. "A methodology to reduce the counter gear subassembly reworks", *Journal of Engineering Science and Technology*, December 2014, pages: 46 – 56. 2014

16. "A methodology for achieving design review defect density goals in software development process", *International Journal of Manufacturing, Industrial & Management Engineering*, Vol. 2, No.1, pages: 181 - 191. 2014
17. "Application of Mahalanobis - Taguchi system and design of experiments to reduce the field failures of splined shafts", *International Journal of Quality and Reliability Management*, Vol.31, No.6, pages: 681-697. 2014
18. "Application of desirability function for optimizing the performance characteristics of carbonitrided bushes", *International Journal of Industrial Engineering Computations*, Vol. 4, No.3, pages: 305-314. 2013
19. "Identification of potential churn customers for a telecom service provider: A case study", *Quality & Reliability Journal*, Vol.6, No.1, pages: 11-13, 2013.
20. "An Approach to reduce the variation in the continuous operating voltages across lightening arrester assemblies", *International Journal of Electrical Engineering*, Vol. 5, No.6, pages: 691 – 698, 2012.
21. "An optimum test stopping criterion based on software reliability modeling and Taguchi methods", *International Journal of Reliability and Safety*. Vol. 6, No. 4, pages: 372 - 385, 2012.
22. "Simultaneous optimization of multiple performance characteristics of Carbonitrided pellets: A case study", *International Journal of Advanced Manufacturing Technology*, Vol. 61, No. 5-8, pages: 585 - 594, 2012.
23. "Modeling the defect density of embedded system software using Bayesian belief networks: A case study", *Software Quality Professional*, Vol. 14, No. 3, pages: 39 - 45, 2012.
24. "Lean Six-Sigma application in business process outsourced organizations", *International Journal of Lean Six Sigma*, Vol. 2. No.4, pages: 371-380, 2011.
25. "Optimization of actuator performance using robust engineering and feature selection methodologies – A case study", *International Journal of Productivity and Performance Management*, Vol. 60, No.6, pages: 642 – 652, 2011.
26. "SLA baselining of Non-Normal metrics: A profit optimization approach", *Software Quality Professional*, Vol. 12, No.2, pages: 42 – 44, 2010.
27. "Optimization of the induction hardening operation using robust design", *Journal of Quality Engineering Forum*, Vol. 11, No. 4, 70-80, 2003.

#### **Papers published in Books**

1. "An application of dual-response surface optimization methodology to improve the yield of pulp cooking process", *Advanced Mathematical Techniques in Engineering Sciences*, Chapter 5, pages: 91 – 110, CRC Press (Taylor & Francis Group), 2018, ISBN: 978-1-31-514897-7.
2. "Quality & reliability engineering: An introduction", *Quality and Reliability Engineering: Recent Trends and Future Directions*, pages: 1 – 3, Allied Publishers, India, 2013, ISBN: 978-81-8424-831-9.
3. "Optimization of the yield of a code review process", *Proceedings of the International Conference on Quality, Reliability and Operations Research*, pages: 161 – 168, Excel India Publishers, India, 2013. ISBN: 978-93-82880-27-1.
4. "Modeling of code review process yield using Bayesian belief networks: A case study", *Proceedings of International Conference on Software Engineering*, pages: 121 – 127, Tata McGraw Hill Education Private Limited, India, 2011. ISBN: 978-0-07-107816-9.

#### **Books published**

- Bobby, J., Acharya, U.H. and Chakraborty, A. (eds): *Quality and Reliability Engineering: Recent Trends and Future Directions*, Allied Publishers, India, 2013. ISBN: 978-81-8424-831-9.

### Conference organized

- *International Conference on Quality and Reliability Engineering: Recent Trends & Future Directions*, 20 – 22 December, 2011, Hotel Atria, Bangalore.

### Paper presented in Conferences

1. "Optimization of software development life cycle process to minimize the delivered defect density", presented in *International Conference on Advancing Frontiers in Operational Research: Towards a sustainable world (AFOR-2017)*, 21 – 23 December 2017, Kolkata.
2. "Improving the recruitment process quality using predictive modeling", presented in *14<sup>th</sup> Annual Conference of Indian Society for Quality*, 8 – 9 December 2017, Bangalore.
3. "A methodology for quantitatively managing agile software projects using Taguchi's loss function", presented in *International Conference on Robust Quality Engineering (ICRQE - 2017)*, 19 - 21 January 2017, Mumbai.
4. "A fuzzy optimization approach for software reliability estimation", presented in *International Conference on Advanced Materials, Manufacturing, Management and Thermal Sciences (AMMMT - 2016)*, 23 - 24 September 2016, Tumkur, Karnataka.
5. "A methodology for quantitatively managing the coding phase of software development process", presented in *International Conference on Recent Advances in Engineering Sciences (ICRAES - 2016)*, 8 -9 September 2016, Bangalore.
6. "A methodology to improve the membership renewal rate of a holiday resort group", presented in *International Conference on Statistics for Twenty First century (ICSTC-2015)*, 17 – 19 December, Trivandrum.
7. "A methodology to qualitatively managing the bug fixing process using Mahalanobis – Taguchi System", presented in *2<sup>nd</sup> International Conference on Robust Quality Engineering (ICRQE 2014)*, 15 – 17 December, Bangalore.
8. "A methodology to achieve the requirement review defect density goals in software development process", *International Conference on Business Analytics and Intelligence (ICBAI 2014)*, 18 – 20 December, 2014. Bangalore.
9. "A methodology for achieving design review defect density goals in software development process", presented in *International Conference on Recent Advances in Engineering Sciences (ICRAES 2014)*, 4-5 September, 2014. Bangalore.
10. "A Methodology to Reduce the Counter Gear Subassembly Reworks", presented in *International Conference on Mathematical Techniques in Engineering Applications (ICMTEA 2013)*, 24 – 25 October 2013, Dehradun.
11. "A dual response surface optimization approach for minimizing the variation of paint thickness in powder coating process", presented in *International Conference on Advanced Materials, Manufacturing, Management and Thermal Sciences (AMMMT 2013)*, 3 – 4 May 2013, Tumkur.
12. "Optimization of Code Review Yield Process", presented in *International Conference on Quality, Reliability & Operations Research (ICONQROR 2013)*, 7 – 9 January 2013, Mumbai.
13. "Modeling of Code Review Process Yield using Bayesian Belief Networks: A Case Study", *International Conference on Software Engineering (CONSEG 2011)*, 17 – 19 February, 2011, Bangalore.
14. "Identification of Potential Churn Customers for a Telecom Service Provider: A Case Study", Presented in *13<sup>th</sup> international Conference on Quality (ICQ 2011)*, 6 - 7 January 2011, Bangalore.
15. "Optimization of Mobile Tower Utilization for a Telecom Service Provider: A Case Study", presented in *International Congress on Productivity, Quality, Reliability, Optimization and Modeling (ICPQROM 2011)*, 7 – 8 February, 2011, New Delhi.

16. "Arriving at Optimum Test Stopping Criteria using Software Reliability Modeling: A Case Study", accepted in *13<sup>th</sup> International Conference on Reliability and Quality in Design (ISSAT 2010)*, 5 – 7 August 2010, Washington DC, USA
17. "Optimization of Bench Strength for Software Company", Presented in *4<sup>th</sup> International Conference on Quality, Reliability and Infocom Technology: Trends and Future Directions (ICQRIT 2009)*, 18 – 20 December 2009 New Delhi.
18. "Forecasting Daily Call Volumes", presented in *National Conference on Tools & Techniques for Quality and Productivity Improvement*, 8 – 9 February 2005, New Delhi.

### **Ongoing Research Projects**

- Service level agreement baselining methodology for non-normal characteristics
- Fuzzy optimization methodology for simultaneous optimization of continuous and categorical characteristics
- Modified control chart for monitoring non-normal characteristics
- Optimization of software development process to minimize the delivered defect density

### **Ongoing Industry Assignments**

1. Training and guidance in achieving operational excellence using Six Sigma funded by *Walvoil Fluid Power*
2. Training and guidance in predictive modeling funded by *Manthan Software Services*
3. Training and guidance in developing solutions to business problems using Analytics funded by *Hewlett Packard Inc.*
4. Problem solving using design of experiments funded by *Syngene International Pvt Ltd*
5. Training and guidance in achieving operational excellence using Six Sigma funded by *UltraTech Cements Ltd.*
6. Problem solving using design of experiments funded by *Toyota Industries Engine India Ltd*

### **Major Consultancy Assignments (Completed)**

- Training and Consulting in Business Analytics: *Quest Global*, 2018 – 19
- Training and Consulting in Business Analytics: *Tata Steel*, 2017 – 18
- Training and Consulting in Business Analytics: *Airbus India*, 2016 – 17
- Training and Consulting in Business Analytics funded by *Adani Power*, 2016 - 17
- Training and Consulting in Business Analytics: *L&T Infotech*, 2016 – 17
- Six Sigma Black Belt and Green Belt certification programs: *Huawei Technologies*, 2016 - 17
- Training and Consulting in Business Analytics: *Deloitte*, 2015 - 17
- Six Sigma Black Belt and Green Belt certification programs: *Hinduja Global Solutions*, 2016-17.
- Process Improvements through Six Sigma methodology: Project execution, *Infosys bpo*, 2012–14.
- Process Improvements through Six Sigma methodology: Training & Project execution, *Accenture Services*, 2010–13.
- Process Improvements through Six Sigma methodology: Training & Project execution. *Infosys bpo Ltd*: 2003 – 2011.
- Process Improvements through Six Sigma Methodology: Training & Project execution. *Hinduja Global Solutions Ltd*. 2009 – 2011.
- Development of Statistical approach for Service Level Agreement Baselining. *Wipro Technologies Ltd*, 2009.

- Development of Process Performance Models: *Robert Bosch (India) Ltd*, 2001 – 03 & 2007 – 08.
- Development of Orthogonal Array based Software Testing Methodology. *Wipro Technologies Ltd*, 2004 – 06.
- Development of Residual Bugs Estimation Methodology using Software Reliability Modeling. *Wipro Technologies Ltd*, 2004 – 06.
- Statistical Data Analysis: *ITC Tobacco Technology Center*, 2004 – 05.
- Process improvements through Six Sigma methodology: Training & Project execution. *Harihar Polyfibers & Grasilene Division*, 2000 – 03

## Major Teaching & Training Assignments (Completed)

### • General Programs

1. Foundation Course on Business Analytics using R: ISI, Hyderabad (3 batches)
2. Foundation Course on Business Forecasting using R: 5 batches
3. Program on Problem Solving using Design of Experiments: 6 batches
4. Foundation Course on Business Analytics using R: 7 batches
5. Foundation Course on Predictive Modeling using Python: 3 batches
6. Certification Program on Data Mining and Business Analytics: ISI, Mumbai (2 batches)
7. Program on Advanced Data Analysis using R (North-East): Agartala. Tripura
8. Program on Advanced Data Analysis: North East: Imphal, Manipur
9. Program on Advanced Data Analysis: Cochin
10. Program on Data Mining and Business Analytics - North East: Aizawl, Mizoram
11. Program on Data Mining and Business Analytics: 10 batches (ISI, Mumbai)
12. Program on Statistics for Data Exploration and Modeling: 1 batch
13. Six Sigma Black Belt (with Lean) Training Program for IT / ITES Industries: 4 batches
14. Six Sigma Advanced Green Belt Training Program for IT / ITES Industries: 2 batches
15. Workshop on Statistical Techniques for Data Mining & Business Analytics: 12 batches
16. Workshop on Statistical Techniques for Software Metrics Analysis: 2 batches.
17. Workshop on Statistical Models & Techniques for Quantitative Project Management (QPM): 5 batches

### • Corporate Training Programs

1. Program on Business Analytics: *Hewlett Packard Inc.* 2019
2. Program on Design of Experiments: *Toyota Industries Engine India*, 2019
3. Program on Applied Statistics using Minitab: *Natco Pharma*, 2019
4. Program on Six Sigma Green Belt Certification: *Walvoil Fluid Power*, 2019
5. Foundation Course on Predictive Modeling: *Manthan Software Services*, 2019
6. Program on Business Forecasting: *Hewlett Packard Inc.* 2019
7. Program on Design of Experiments: *Syngene International* 2019
8. Program on Six Sigma Green Belt Certification: *A P Cement Works* 2019
9. Program on Data Analytics & Visualization: *Adani Solar*. 2019
10. Program on Data Analytics & Visualization: *Adani Power Maharashtra Ltd.* 2019
11. Program on Six Sigma Green Belt Certification: *Narmada Cement Works* 2019
12. Program on Data Analytics & Visualization: *Udupi Power Corporation* 2019

13. Program on Six Sigma Green Belt Certification: *Vikram Cement Works* 2019
14. Foundation Course on Business Analytics using R: *Quest Global* 2018
15. Program on Design of Experiments: *Syngene International* 2018
16. Advanced Course on Analytics: *Tata Steel* 2018
17. Foundation Course on Business Analytics using R: *Hewlett Packard Inc.* 2018
18. Foundation Course on Predictive Modeling using Python: *Caterpillar* 2018
19. Foundation Course on Business Analytics using R: *Ernst & Young* 2018
20. Program on Six Sigma Green Belt Certification: *Rajshree Cement Works* 2018
21. Program on Six Sigma Green Belt Certification: *Gujarat Cement Works* 2018
22. Program on Business Analytics: *Tata Steel* 2018
23. Program on Statistical Techniques: *Altran Technologies* 2017
24. Foundation Course on Business Analytics: *Tesco* 2017
25. Program on Design of Experiments: *Toyota Industries Engine India* 2017
26. Program on Business Analytics: *Airbus India* 2017
27. Program on Business Analytics: *Adani Power* 2017
28. Program on Design of Experiments: *Titan Jewellery Division* 2017
29. Program on Business Analytics: *L&T Infotech* 2016-17
30. Six Sigma Black Belt Certification Program: *Huawei Technologies* 2016
31. Program on Business Forecasting: *SIAM* 2016
32. Program on Business Analytics: *Deloitte* 2016
33. Program on Advanced Data Analysis: *Hewlett Packard Enterprise* 2016
34. Six Sigma Black Belt Certification Program: *Hinduja Global Solutions* 2016
35. Program on Business Analytics: *Infosys Technologies*, 2016
36. Program on Design of Experiments: *Hical Technologies*, 2015
37. Program on Business Analytics: *Infosys Technologies*, 2015
38. Program on Total Quality Management: *Tractors India Pvt Ltd.* Kolkata, 2015.
39. Program on Business Analytics: *TCS*, 2015
40. Six Sigma Green Belt Program: *Accenture*, 2015
41. Six Sigma Green Belt Program: *Huawei Technologies*, 2015.
42. Data Science program – *Samsung*, 2015.
43. Program on Statistics for Data Exploration and Modeling: *Deloitte, Mumbai*, 2015.
44. Program on Statistical Tools and Techniques for Six Sigma Green Belts: *Mindtree Solutions*, 2015.
45. Statistics for Data Exploration and Modeling: *Deloitte, Hyderabad*, 2015.
46. Program on Business Analytics: *Infosys Technologies*, 2015.
47. Six Sigma Green Belt Program: *Hinduja Global Solutions*, 2015
48. Program on Business Analytics: *Infosys Technologies*, 2014.
49. Six Sigma Green Belt Program: *Hinduja Global Solutions*, 2014
50. Program on Statistical Techniques for Business Intelligence: *Cross-domain Solutions Private Ltd*, 2014.
51. Program on Statistical Techniques for Business Intelligence: *Tally Solutions*, 2014.
52. Program on Statistical Tools and Techniques for Six Sigma Green Belts: *Mindtree Solutions*, 2014.
53. Program on Statistical Techniques for IT Analytics: *Honeywell Technology Solutions*, 2014
54. Statistical Techniques for Business Analytics: *Adobe Systems*, New Delhi, 2013



55. Six Sigma Black Belt Program: Bharat Electronics, 2013
56. Design For Six Sigma Program: Bharat Electronics, 2013
57. Six Sigma Black Belt Program: *TVS Motors*, Hosur, 2012.
58. Six Sigma Black Belt Program: *Barat Electronics*, Bangalore, 2012
59. Statistical Techniques for Business Analytics: *Apollo Munich*, New Delhi, 2012
60. Statistical Techniques for Data Mining & Business Analytics: *Hewlett Packard e Global Operations*, 2012.
61. Six Sigma Green Belt Program: *Visionet Systems*, 2012.
62. Statistical Models & Techniques for Quantitative Project Management. *Siemens Information Systems Ltd.*. 2011.
63. Statistical Techniques for Business Analytics. *Firstsource Solutions*, 2011.
64. Six Sigma Green Belt Program: *Accenture Services*, 2011.
65. Statistical Techniques for Business Analytics. *Microsoft India (R & D) Pvt Ltd.*, 2010.
66. Design of Experiments & Advanced Taguchi Methods. *Beceem Communications*. 2010.
67. Statistical Models & Techniques for Quantitative Project Management. *Beceem Communications*. 2010.
68. Six Sigma Green Belt Program. *Bharat Electronics*. 2010
69. Six Sigma Black Belt Program. *Hewlett Packard e Global*, 2010
70. Program on Business Analytics & Optimization Techniques. *Honeywell Technologies Ltd*. 2009.
71. Program on Business Analytics & Optimization Techniques. *Tesco HSC*. 2009.
72. Program on Software Reliability Modeling. *Cognizant Technologies Ltd*. 2009.
73. Program on Advanced Statistical Techniques for Six Sigma Black Belts. *First Source Solutions*. 2009.
74. Six Sigma Black Belt Training Program. *IBM Daksh*. 2008.
75. Program on Statistical Techniques for Software Metrics Analysis. *Unisys Global Services*. 2008.
76. Program on Quantitative Project Management. *Huawei Technologies*. 2008.
77. Program on Quantitative Project Management. *Cognizant Technologies Ltd*. 2008.
78. Program on Six Sigma Green Belt tools. *Wipro Technologies*. 2008.
79. Program on Statistical Techniques for Software Metrics Analysis. *Torry Harris Solutions*. 2007.
80. Program on Statistical Techniques for Software Metrics Analysis. *Cognizant Technologies Ltd*. 2007.
81. Program on Statistical Techniques for Software Metrics Analysis. *Unisys Global Services*. 2007.
82. Program on Statistical Techniques for Software Metrics Analysis. *Nokia Siemens Networks*. 2006

#### **Invited talks / lectures delivered (2018 - 19)**

1. Workshop on Statistics and Analytics organized by Sri Krishan Institute of Technology, Bangalore
2. Workshop on Predictive Modeling using Python organized by Loyola-ICAM College of Engineering and Technology, Chennai
3. Faculty Development Program on Predictive Modeling using R organized by Crescent Institute of Science and Technology, Chennai.
4. Workshop on Design of Experiments organized by CMTI, Bangalore

5. Faculty Development Program on R programming and Predictive Modeling organized by JSS Academy of Technical Education, Bangalore.
6. Faculty Development Program on Predictive Modeling using Python organized by Sri Ramakrishna Engineering College, Coimbatore

### Software Skills

1. MS Excel and programming using Visual Basic for Applications (VBA)
2. Minitab
3. SPSS and Amos
4. R and R Studio
5. SAS
6. Python

### Other Activities

- Editor in Chief, "The Beacon", National Institution for Quality & Reliability (NIQR) newsletter. 2005 – 2008.
- Associate Editor, SQC & OR Division Newsletter, 2008 – 2012.

### Work Experience

1. Technical Officer Grade I (Since 2013) : Statistical Quality Control & Operations Research Unit, Indian Statistical Institute, Bangalore
2. Technical Officer Grade II (2009 - 2013) : Statistical Quality Control & Operations Research Unit, Indian Statistical Institute, Bangalore
3. Technical Officer Grade III (2004 - 2009) : Statistical Quality Control & Operations Research Unit, Indian Statistical Institute, Bangalore
4. Consultant (2003 – 2004): Infosys, Bangalore. Taken sabbatical from Indian Statistical Institute and worked for Infosys bpo as a full time consultant.
5. Technical Officer Grade III (1999 - 2003) : Statistical Quality Control & Operations Research Unit, Indian Statistical Institute, Bangalore

### Awards and Recognition

- Best paper award for the paper titled "A methodology to qualitatively managing the agile software projects using Taguchi's loss function" at *3rd International Conference on Robust Quality Engineering (ICRQE 2017)*, 19 – 21 January, Mumbai.
- Best paper award for the paper titled "A methodology to qualitatively managing the bug fixing process using Mahalanobis – Taguchi System" at *2nd International Conference on Robust Quality Engineering (ICRQE 2014)*, 15 – 17 December, Bangalore.

### Education

Degree	Subjects	University / Institute	Year
PhD	Mechanical Engineering Sciences	Visvesvaraya Technological University, Belagavi	2018
Master of Technology	Quality, Reliability & Operations Research	Indian Statistical Institute, Kolkata	1997
Master of Science	Statistics	Mahatma Gandhi University, Kottayam	1995