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Members in committees

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- Member, CAS Committee, JNU
- Member, CIS advisory, JNU
- Member, Board of Studies, Babasaheb Bhimrao Ambedkar University (A Central University), Lucknow
- Associate Dean, SC&SS
- Chairperson, Annual Report and JNU News of the University,
- Member, Academic Committee of IUAC, New Delhi
- Chairperson, NAAC, SC & SS, JNU
- Chairperson, Evaluation committee, Research Reading and Seminar Course, M.Tech (CS 801)
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- Chairperson, Coordination cum Advisory Committee for MCA Programme
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- Chairperson, Cyber Security, SC & SS, JNU
- Member, Governing Body, Dyal Singh College, University of Delhi
- Member, Screening Committee for promotion to the post of Professor, Dyal Singh College, University of Delhi
- Member, Screening Committee for promotion to the post of Professor, Dyal Singh College Evening, University of Delhi
- Convener, Academic Planning, Workload and Library Committee Dyal Singh College, University of Delhi

Research Papers in refereed/indexed journals

1. Sharma, M., Kumari, M., & Singh, V. B. (2023). Bug summary entropy based training candidates identification in cross project severity prediction. *International Journal of System Assurance Engineering and Management*, 1-34.
2. Singh, A., Kapur, P. K., & Singh, V. B. (2023). Developing Classifiers by Considering Sentiment Analysis of Reported Bugs for Priority Prediction. . *International Journal of System Assurance Engineering and Management*
3. Upasana Singh, V.B. Singh, A reversible data hiding scheme for sharing medical data, Biomedical Signal Processing and Control,Volume 85, August, 2023,105021,ISSN 1746-8094,
4. Kumar P, Chaudhary K, Kumar V, Singh VB. Dynamic Advertising-based Goodwill Incorporating Fuzzy Environment in Segment-Specific Market. International Journal of Mathematical, Engineering & Management Sciences. 2023 Aug 1;8(4).
5. Jagwani, P., Singh, V.B., Agrawal, N. *et al*. Blockchain technology and software engineering practices: a systematic review of literature using topic modelling approach. *Int J Syst Assur Eng Manag* **14** (Suppl 1), 1–17 (2023). https://doi.org/10.1007/s13198-022-01823-x
6. Kumari, M., Singh, V. B., & Sharma, M. (2022). Evaluating the Veracity of Software Bug Reports using Entropy-based Measures. International Journal of Open Source Software and Processes (IJOSSP), 13(1), 1-21.
7. Kumar, S., Sharma, M., Muttoo, S.K.and V.B.Singh(2022) " Inter project defect classification based on word embedding". Int J Syst Assur Eng Manag https://doi.org/10.1007/s13198-022-01686-2
8. Kamlesh Kumar Raghuvanshi, Arun Agarwal, Khushboo Jain, V. B. Singh(2022): A generalized prediction model for improving software reliability using time-series modelling. Int. J. Syst. Assur. Eng. Manag. 13(3): 1309-1320
9. Sushil Kumar, Sunil Kumar Muttoo, V. B. Singh(2022): Classification of Software Defects Using Orthogonal Defect Classification. Int. J. Open Source Softw. Process.13(1): 1-16

10. Tandon, S., Kumar, V., & Singh, V. B. (2022). Empirical evaluation of code smells in open-source software (OSS) using Best Worst Method (BWM) and TOPSIS approach. International Journal of Quality & Reliability Management. Vol. 39 No. 3, pp. 815-835
11. Raghuvanshi, K. K., Agarwal, A., Jain, K., & Singh, V. B. (2021). A time-variant fault detection software reliability model. SN Applied Sciences, 3(1), 1-1
12. Verma, V., Muttoo, S. K., & Singh, V. B. (2020). Multiclass malware classification via first-and second-order texture statistics. Computers & Security, 97, 101895.**Impact Factor-4.438**
13. Mehta, S., Chaudhary, K., & Kumar, V. and Singh V.B. (2020). Optimal promotional effort policy in innovation diffusion model incorporating dynamic market size in segment specific market. International journal of mathematical, engineering and management sciences, 5(4), 682.
14. Verma, V., Muttoo, S.K. & Singh, V.B. Enhanced payload and trade-off for image steganography via a novel pixel digits alteration. Multimedia Tools Appl (2019) Springer , 79(11-12): 7471-7490 (2020), **Impact Factor-2.757**
15. Abhishek Tadon,Madhu Kumari, Meera Sharma and V.B. Singh "Entropy based Software Reliability Growth Modelling for Open Source Evolution, Technical Gazette, Vol. 27 No. 2, 2020.PP.550-557. **Impact factor .738**
16. Meera Sharma , Madhu Kumari and V.B.Singh, "Multi-Attribute Dependent Bug Severity and Fix Time Prediction Modeling", International Journal of System Assurance Engineering and Management, Springer, October 2019, Volume 10, Issue 5, pp 1328–1352
17. Madhu Kumari, Ananya Misra, Sanjay Misra, Luis Fernandez Sanz, Robertas Damasevicius and V.B. Singh. (2019). Quantitative Quality Evaluation of the Software Products by Considering Summary and Comments Entropy of a Reported Bug. Entropy,21(1), **Impact Factor-2.738,** pp.1-32.
18. Singh V.B., Meera Sharma and H. Pham "Entropy Based Software Reliability Analysis of Multi-Version Open Source Software". IEEE Transactions on Software Engineering. 44(12): 1207-1223, Science Citation Index Expended (Web of Science), **Impact Factor 9.322**
19. Sharma, M., Pham, H., & Singh, V. B. (2019, Modeling and analysis of leftover issues and release time planning in multi-release open source software using entropy based

measure. Computer Systems Science and Engineering, 34(1), 33-46. Science Citation Index Expended (Web of Science), **Impact Factor 1.486;**

20. Madhu Kumari Sharma Meera and V. B. Singh (2018) "Severity Assessment of a Reported Bug by considering its Uncertainty and Irregular State", International Journal of Open Source Software and Processes,IGI Global, 9(4),pp.20-46,SCOPUS
21. Kumar, V., Singh, V. B., Dhamija, A., & Srivastav, S. (2018). Cost-reliability-optimal release time of software with patching considered. International Journal of Reliability, Quality and Safety Engineering, World Scientific Publishing 25(04), 1850018, SCOPUS
22. Sharma Meera, Kumari Madhu, Tandon Abhishek, Singh VB.(2017). "Reduction of Redundant Rules in Association Rule Mining Based Bug Assignment" International Journal of Reliability, Quality and Safety Engineering, World Scientific Publishing. Vol. 24, No. 6,(14 pages). SCOPUS
23. Dheer Sharu, Kumar Deepak, Singh VB.(2017). "An Estimation Technique in Agile Archetype using Story Points and Function Point Analysis", International Journal of Process Management and Benchmarking , Inderscience, 7(4), .518 – 539, SCOPUS
24. Dheer Sharu, Kumar Deepak, Singh VB.(2017). "Requirement Paradigms to Implement the Software Projects in Agile Development using Analytical Hierarchy Process, International Journal of Decision Support System Technology , Inderscience, 9(3) : 28-41, SCOPUS
25. Singh VB, Sharma Meera.(2017). "Bug Severity Assessment In Cross Project Context and Identifying Training Candidates", Journal of Information and Knowledge Management, World Scientific, 16(1) :1-30,SCOPUS
26. Sharma Meera , Singh VB.(2016) "Clustering based Association Rule Mining for Bug Assignee Prediction", International Journal of Business Intelligence and Data Mining, Inderscience, 11(2): 130–150, SCOPUS
27. Singh VB, Chaturvedi KK, Khatri SK, Kumar V.(2015). "Bug prediction modeling using the complexity of code changes", International Journal of System Assurance Engineering and Management, Springer, Springer, 6(1): 44-60, SCOPUS
28. Chaturvedi KK, Kapur PK , Anand Sameer, Singh VB.(2014). "Predicting the complexity of code changes using entropy based measures", Int. J. Systems Assurance Engineering and Management, Springer, 5(2): 155-164, SCOPUS

29. Sharma Meera, Bedi Punam, Singh VB.(2014). " An Empirical evaluation of cross project priority prediction" International Journal of Systems Assurance Engineering and Management, Springer, 5(4): 651-663, SCOPUS
30. Yadav Nikita and Kumari Madhu, Singh VB.(2014). "Generalized Reliability Model for Cloud Computing" International Journal of Computer Application, 88(14): 0975 – 8887.
31. Yadav Nikita, Khatri Sujata, Singh VB.(2014). "Developing an Intelligent Cloud Computing for Higher Education" ACM Sigsoft, 39(1):1-5.
32. Yadav Nikita, Singh VB.(2013). "Quality Issues in Infrastructure as a Service, International Journal of Computer Science Issues, 10(5): 1694-0814 | ISSN (Online): 142-147.
33. Kapur, P. K., Singh, V. B., Singh, O., & Singh, J. N. (2013). Software release time based on different multi-attribute utility functions. International Journal of Reliability, Quality and Safety Engineering, 20(04), 1350012, SCOPUS
34. Singh VB, Sharma Meera, Khatri Sujata, Srivastava OS.(2013). "Mathematical Modeling of Software Bug Complexity",Covenant Journal of Informatics and Communication Technology, Covenant University 2013,1(1):29:36
35. Singh VB, Chaturvedi KK.(2013). "Bug Prediction using Entropy Based Measures", International Journal of Knowledge Engineering and Data Mining, Inderscience, 2(4):266-291,SCOPUS
36. Singh VB, Srivastava OS.(2013). "Open Source software and its utility in education", Intellectual Resonance, 1(1): 135-141.
37. Singh VB, Kumari Madhu.(2013). "Understanding the Development Model of Open Source Software and its Applications" Intelelctual Resonance, 1(2):48-54
38. Chaturvedi KK, Singh VB.(2012). "An empirical comparison of machine learning techniques in predicting the bug severity of open and closed source projects", International Journal of Open Source Software and Processes, IGI Global 4(2): 32-59.
39. Yadav Nikita, Singh VB.(2012). "E-Governance: Past, Present and Future in India" International Journal of Computer Applications,53(7):36-48.
40. Khatri Sujata, Chhilar RS, Singh VB.(2012). "Improving the Testability of Object Oriented Software using Reliability Growth Models" International Journal of Computer Applications,35(11): 24-35.
41. Singh VB, Chaturvedi Krishna Kumar.(2011). "Bug Tracking and Reliability Assessment System " ,International Journal of Software Engineering & Applications, 2011,5(4):1-14.

42. Khatri Sujata, Chhilar R.S., Singh VB.(2011). " Measuring Bug Complexity in Object Oriented Software" ACM SIGSOFT, 2011, 36(6):1-8.
43. Singh VB , Kapur PK, Basirzadeh Mashaallah.(2012). " Open Source Software Reliability Growth Model by Considering Change- Point", BVICAM's International Journal of Information Technology,4(1):1-6.
44. Singh VB, Kapur P.K. and Abhishek Tandon.(2010). "Measuring Reliability Growth of Software by Considering Fault Dependency, Debugging Time Lag Functions and Irregular Fluctuation" ACM SIGSOFT Software Engineering notes, 25(3):1-11.
45. Kapur PK, Singh VB, Anand Sameer, Yadavalli VSS.(2008). "Software Reliability Growth Model with Change-Point and Effort Control Using a Power Function of Testing Time" International Journal of Production Research, Taylor and Francis , 46(3): 771-787.Science Science index Expended, **Impact Factor: 8.568]**
46. Singh OP, Singh VB, Kumar Jyotish and Kapur PK.(2009). "Generalized Software Reliability Growth Model for Fault detection–correction process incorporating Change-Point", Communications in Dependability and Quality Management: An International Journal, 2009, 12(1):35-46.
47. Kapur PK, Anand Sameer, Singh VB.(2009). "Distribution based Software Reliability Growth Model with Change-Point and Two types of Imperfect Debugging" BVICAM's International Journal of Information Technology,1(2):29-34.
48. Kapur PK, Singh VB, Anand Sameer.(2007). "Fault Dependency Based Software Reliability Growth Modeling with Debugging Time Lag Functions", Communications in Dependability and Quality Management An International Journal, Serbia, 10(3): 46-68.
49. Singh VB, Yadav Kalpana, Kapur Reecha, Yadavalli VSS.(2007). "Considering Fault Dependency Concept with Debugging Time Lag in Software Reliability Growth Modeling Using a Power Function of Testing Time" International Journal of Automation and Computing, Springer, 4(4): 359-368, SCOPUS
50. Kapur PK., Singh VB., Anand Sameer, Yadavalli VSS. (2007). "An Innovation Diffusion Model Incorporating Change in Adoption Rate" Management Dynamics, 16(1): 33-40

Research papers in Edited Conference proceedings

51. Invited Lecture on “Open-Source Software Evolution: A Machine Learning Centric Approach” 13th Triennial International Conference of the Association of the Asia Pacific Operational Research Societies (APORS) to be held on November 9 - 12, 2022 at Eastwood Richmonde Hotel, 17 Orchard Road, Eastwood City, Bagumbayan, Quezon City, 1110 Philippines.
52. Singh V. B (with Kumar, S., Sharma, M., Muttoo, S.K.). “Machine Learning Based Software Defect Categorization Using Crowd Labeling”. In Predictive Analytics in System Reliability 2022 Sep 9 (pp. 213-227). Cham: Springer International Publishing
53. Tandon, Stuti, Vijay Kumar, and V. B. Singh. "An empirical analysis of code smells using CRITIC-TOPSIS method." In 2022 12th International Conference on Cloud Computing, Data Science & Engineering (Confluence), pp. 234-239. IEEE, 2022.
54. Singh V, Kumar V, Singh VB. Optimal Selection of Software Reliability Growth Models: A CRITIC-CODAS Technique. In2022 10th International Conference on Reliability, Infocom Technologies and Optimization (Trends and Future Directions)(ICRITO) 2022 Oct 13 (pp. 1-6). IEEE.
55. S. Kumar, V. B. Singh and S. K. Muttoo, "Bug Report Classification by Selecting Relevant Features Using Chi Square, Information Gain and Latent Semantic Analysis," 2021 9th International Conference on Reliability, Infocom Technologies and Optimization (Trends and Future Directions) (ICRITO), 2021, pp. 1-5, doi: 10.1109/ICRITO51393.2021.9596496
56. Verma, V., Muttoo, S.K. and Singh, V.B., 2022. Detecting Stegomalware: Malicious Image Steganography and Its Intrusion in Windows. In Security, Privacy and Data Analytics(pp. 103-116). Springer, Singapore.
57. Verma, V., Muttoo, S. K., & Singh, V. B. (2020, December). Detection of Malign and Benign PE Files Using Texture Analysis. In International Conference on Information Systems Security (pp. 253-266). Springer, Cham.
58. Kumari Seema Rani, Kumari Madhu, Singh V.B., Sharma Meera : Deep Learning with Big Data: An Emerging Trend. ICCSA (7) 2019: 93-101
59. Madhu Kumari and Singh V.B. "An Improved Classifier Based on Entropy and Deep Learning for Bug Priority Prediction." In International Conference on Intelligent Systems Design and Applications, pp. 571-580. Springer, Cham, 2018.

60. Kamlesh Raghuanshi, Sharma Meera Tandon Abhisek and and Singh VB, Quantitative Quality Assessment of Open Source Software by considering New Features and Feature Improvements,, Lecture Notes in Computer Science book series (LNCS, volume 10964) ,2018
61. Singh VB, Chaturvedi K K , Khatri Sujata , Sharma Meera.(2017). "Complexity of the Code Changes and Issues Dependent Approach to Determine the Release Time of Software Product, 17th International Conference on Computational Science and Its Applications, LNCS, Springer 519-529.
62. Sharma Meera, Kumari Madhu and Singh VB.(2015). "The Way Ahead for Bug-fix time Prediction, 3rd International Workshop on Quantitative Approaches to Software Quality (QuASoQ), co-located with 22nd Asia-Pacific Software Engineering Conference (APSEC 2015), December 1-4, 2015, New Delhi, India, , 2015. pp. 31-38.
63. Sharma Meera, Kumari Madhu and Singh VB.(2015). "Post Release Versions based Code Change Quality Metrics", 3rd International Symposium on Women in Computing and Informatics (WCI-2015) co-located with Fourth International Conference on Advances in Computing, Communications and Informatics (ICACCI), August 10-13, Kochi, Kerala, India. pp. 235-243.
64. Sharma Meera, Kumari Madhu and Singh VB.(2015). "Bug Assignee Prediction Using Association Rule Mining", 15th International Conference on Computational Science and Its Applications (ICCSA). June 22-25, 2015, University of Calgary at Banff, Canada LNCS, Springer. pp. 444-457.
65. Kundra Shveta, Dixit VS and Singh VB.(2015). " Dissimilarity Measures for Refinement of Cluster based on Page Access, Time and Session Weight", Quality Reliability Infocom Technlogy and Industrial Technology Management, IK International Publishing house pvt.Ltd, pp.271-288.
66. Singh VB and Sharma Meera .(2014). "Prediction of the complexity of code changes based on number of open bugs, new feature and feature improvement", 25th IEEE International Symposium on Software Reliability Engineering, The Fourth Workshop on Open Systems Dependability held during November 03-06, 2014 at Napples ,Italy, IEEE xlpore ,pp.478-483.
67. Sharma Meera , Singh RK and Singh VB.(2014). "Multiattribute Based Machine Learning Models for Severity Prediction in Cross Project Context" 14th International Conference on

Computational Science and Its Applications (ICCSA), Computational Science and Its Applications , Springer Lecture Notes in Computer Science Volume 8583, pp 227-241

68. Dixit Veer Sain Kundra Bhatia Shveta , Singh VB.(2014). "Evaluation of Web Session Cluster Quality Based on Access-Time Dissimilarity and Evolutionary Algorithms" ICCSA (5) Springer Lecture Notes in Computer Science ,297-310
69. Sharma Meera , Kapur PK and Singh VB.(2014). "Understanding Software Repositories and Dynamics of Software Evolution" published in the proceedings of 5th DQM International Conference on Life Cycle Engineering and Management, ICDQM-2014 held during Belgrade, Serbia, pp.119-126.
70. Sharma Meera and Singh VB.(2014)."Multiattribute based Bug Severity Prediction" published in the proceedings of 5th DQM International Conference on Life Cycle Engineering and Management, ICDQM-2014 held during Belgrade, Serbia,pp.135-142.
71. Sharma Meera, Kumari Madhu and Singh VB.(2013). "Understanding the Meaning of Bug Attributes and Prediction Models". I-CARE2013 in Proceedings of the 5thIBM Collaborative Academia Research Exchange Workshop, 2013, Article No. 15, ACM, New York, USA.ISBN: 978-1-4503-2320-8.
72. Sharma Meera, Chaturvedi KK and Singh VB.(2013). "Severity Prediction of Bug Reports in Cross Project Context".In Proceedings of International Conference on Reliability, Infocom Technologies and Optimization (ICRITO 2013) during 29-31 Jan. 2013 held at Amity University, Noida, UP (India), pp. 96-102. ISBN: 978-93-81583-85-2.
73. Chaturvedi, KK, Bedi P, Misra S and Singh VB.(2013). "An Empirical Validation of the Complexity of Code Changes and Bugs in Predicting the Release Time of Open Source Software" in IEEEproceedings of 13th International Conference on Advanced Computer and Information Technology, Sydney, Australia, pp. 1201-1206, ISSN 9780-7695, IEEE Explore.
74. Chaturvedi KK, Singh P and Singh VB.(2013). "Tools in Mining Software Repositories". In CPS-IEEE Proceedings of 13th International Conference on Computational Science and Its Applications (ICCSA 2013). pg. 89-98. DOI: 10.1109/ICCSA.2013.22
75. Chaturvedi KK, Singh VB and Khatri SK .(2013). "A study of bug prediction approaches using Mozilla project". In Proceedings of International Conference on Reliability, Infocom Technologies and Optimization (ICRITO 2013) during 29-31 Jan. 2013 held at Amity University, Noida, UP (India),pg. 350-357. ISBN: 978-93-81583-85-2.

76. Chaturvedi KK and Singh VB.(2012). "Determining Bug Severity Using Machine Learning Techniques". In CSI-IEEE Proceedings of International Conference on Software Engineering (CONSEG-2012). IEEE Explore, pg. 378-387, ISBN978-1-4673-2173-2175-4.
77. Singh VB and Chaturvedi KK.(2012). "Entropy Based Bug Prediction using Support Vector Regression" in IEEE Proceedings of 12th International Conference on Intelligent Systems Design and Applications during 27-29 Nov. at CUSAT, Kochi (India). ISBN: 978-1-4673-5118-8_c 2012 IEEE Explore. pg. 746-751
78. Sharma Meera, Punam Bedi and Singh VB.(2012). "Predicting the Priority of a Reported Bug and Cross Project Validation" International Conference on Intelligent Systems Design and Applications (ISDA),Nov.27-29, pp.539-545,IEEE Explore, ISSN : 2164-7143.
79. Singh VB, Khatri Sujata and Kapur PK.(2010). " A Reliability Growth Model for Object Oriented Software Developed under Concurrent Distributed Development Environment, published in proceedings of 2nd International Conference on Reliability Safety and Hazard, organized by Bhabha Atomic Research Center, Mumbai held during December, 14-16, pp.479-484, published by IEEE,ISSN: 0163-5948
80. Singh VB, Kapur PK and AbhishekTandon.(2010). " Measuring Reliability Growth of Open Source Software using Stochastic Differential Equations" Published in the proceedings of Second World Congress on Software Engineering (WCSE) held during December, 19-20, Huwan,China,Volume-2 pp.: 115 - 118 published in IEEE Xplore),ISSN 0034-4257.
81. Singh VB, Singh OP, Kumar Ravi, Kapur PK.(2010)"A Generalized Reliability Growth Model for Open Source Software" published in proceedings of 2nd International Conference on Reliability Safety and Hazard, organized by Bhabha Atomic Research Center, Mumbai held during December, 14-16, pp. 523-528 , published by IEEE. ISSN: 0163-5948
82. Singh VB, Kapur PK and Kumar Ravi.(2010). "Developing S-shaped Software Reliability Growth Model for Open Source Software" published in IASTEDInternational Conference on Software Engineering, held during February 16-18, Innsbruck, Austria, Acta press
83. Singh VB, Kapur PK and BasirzadehMashaallah.(2010). "Instructions Executed Dependent Software Reliability Growth Modeling for Open Source Software by Considering Change-point Published in the proceeding of 4th National Conference on

Computing for Nation Development-INDIACOM-2010" BharatiaVidyapith, pp.399-404, New Delhi, 25-26 February, 2010, ISSN 0973-7529

84. Kapur PK, Anand Sameer and Singh VB.(2009). "Distribution based Software Reliability Growth Model with Change-Point and Two types of Imperfect Debugging" published in proceeding of Computing for Nation Development-INDIACOM-2009" BharatiaVidyapith, pp. 413-418, New Delhi, 26-27 February, 2009, ISBN 0973-7529
85. Kapur PK, Singh VB and BasirzadehMashaallah.(2008). "Considering Errors of Different Severity in Software Reliability Growth Modeling Using Fault Dependency and Various Debugging Time Lag Functions",in the proceedings of Advances in Performance and Safety of Complex Systems (Eds. A.K.Verma(IIT B),and S.G. Ghadge(NPCIL) MacMillan India Ltd,, pp. 839-849, -ISBN 13: 978-0230634411
86. Kapur P K, Singh VB and Anand Sameer.(2007). "Effect of change-point on software reliability growth models using stochastic differential equation" 3rdInternational Conference on Reliability and Safety Engineering (INCRESE-2007), Udaipur, held during 17-19 December, pp. 320-333.
87. Kapur PK, Singh VB and Yang Bo .(2007). "Software Reliability Growth Model for Determining Fault Types" 3rdInternational Conference on Reliability and Safety Engineering (INCRESE-2007), Udaipur, held during 17-19 December, 334-349.
88. Kapur PK, Singh VB, Jha PC.(2007). "On the Development of s-Shaped Model in Software Reliability" Published in Proceeding of National Conference on Computing for Nation Development,BhartiyaVidyapeeth (Deemed University) Delhi, INDIACOM-2007 pages.295-298, ISBN 0973-7529
89. Kapur PK, Kumar A, Singh VB and Nailama FM.(2007). "On Modelling Software Reliability Growth Model for Errors of different Severity" Published in Proceeding of National Conference on Computing for Nation Development , BhartiyaVidyapeeth , INDIACOM-2007,pages. 279-284, ISBN 0973-7529
90. Kapur PK, Singh VB and Yadav Kalpana.(2007). "Software Reliability Growth Model Incorporating Fault Dependency Concept Using a Power Function of Testing Time" Quality Reliability and Infocom Technology(Eds. P.K.Kapur and A.K.Verma),MacMillan India Ltd.,587-595, ISBN: 9780230634015
91. Kapur PK, Singh VB ,Kumar Ravi and Prashant Johari.(2007). " Considering Imperfect Debugging and Change Point concept in Discrete Software Reliability Growth Modleing

with Multiple Failures", in the Proceedings Mathematical Modeling, Optimization and their Application, Narosa, pp.306-316 ISBN 978-81-8487-067-01

92. Kapur P. K, Singh V.B.,Kumar Ravi, and Prashant Johari.(2007). "Considering Imperfect Debugging and Change-Point Concept in Discrete Software Reliability in Distributed Environment", in the Proceedings Mathematical Modeling, Optimization and their Application, Narosa, pages 199-209 ISBN 978-81-8487-067-01
93. Kapur P. K, Singh V. B., Anand Sameer.(2007). "Software Reliability Growth Model of Fielded Software Based on Multiple Change-Point Concept Using a Power Function of Testing Time" Quality Reliability and InfocomTechnology(Eds. P.K.Kapur and A.K.Verma), MacMillan India Ltd.,pp.171-178, ISBN: 9780230634015.
94. Kapur Pk, Gupta Amit, Khatri SK and Singh VB.(2005). "Flexible Testing Domain Dependent Software Reliability Growth Models",Reliability, Safety and Hazard (Advances in Risk- Informed Technology),Eds. P.V.Varde, A.Srividya, V.V.S. Sanyasi and Ashok Chauhan, Narosa Publication Ltd., New Delhi, pp. 166- 174, 2005.

Research papers presented / Session Chair/Lecture Delivered

1. V.B. Singh, "Bug Prediction Techniques: Analysis and Review" 2nd International Conference on Recent Trends in Engineering, Technology and Business Management " (ICRTETBM 2023), Feb. 22-24, 2023 at Amity University Campus, Sector – 125, Noida, Uttar Pradesh, India
2. V.B. Singh, "Developing Classifiers By Considering Sentiment Analysis of Reported Bugs for Priority Prediction", 2nd International Conference on Recent Trends in Engineering, Technology and Business Management (ICRTETBM 2023), Feb. 22-24, 2023 at Amity University Campus, Sector – 125, Noida, Uttar Pradesh, India
3. Chief Guest, Workshop on Computer Algebra System, Ramjas College, University of Delhi, 22.03.2023
4. Delivered an invited lecture for faculty refresher course Programme being organized by UGC- HRDC University of Kashmir during 04 march, 2022, titled " Resaerch Methodology"
5. Delivered a lecture titled " Can Professors be Intellectual Leaders" on 3rd Short Term Course in Academic Leadership and Resources Management organized by UGC- HRDC JNU during 09 March, 2022
6. Delivered distinguished invited lecture for enhancing the professional competence of University and College teachers in the "8th GURU DAKSHTA" a Faculty Induction Programme being organized by UGC- HRDC, University of Allahabad for newly appointed faculty members during 01April 2022, titled " Being Professor is an Opportunity"

7. Delivered distinguished invited lecture on "A Machine Learning Approach to Open Source Software Evolution" at Amity Center for Interdisciplinary Research (ACIDR), Amity University, Noida, India jointly with Society for Reliability Engineering, Quality and Operations Management (SREQOM) on Tuesday, 15th March 2022.
8. Delivered an invited lecture during 08 march, 2022, titled " Open Source Software Evolution", ARSD College, University of Delhi
9. Delivered an invited lecture during 27 mrach, 2022, titled " Research Methodology", Gurukula Kangri Vishwavidyalaya, Haridwar - 249404, Uttarakhand
10. Distinguished Speaker, DSPP&G, IOE, University of Delhi, NLUJA, Assam, Bhartiya Shikshan Mandal and NIOS, Ministry of Education, Government of India, 18 October, 2021 to 24 October, 2021
11. Distinguished Speaker, "Understanding the Development of Open Source Software", Pre Conference FDP cum Enrich program, ,Innovation in Computing and Information Technology , 31 August-2 September, 2021, Amity University , Noida, UP
12. Distinguished Speaker, Reliaility Anaysis of Software Products , December, 02, 2020, Trends and Best Practices in Reliability and Quality Management, Institute of Technology Management, DRDO, Govt. of India
13. Chair, Conference on Software Engineering and Data Science, University of Kashmir, June 20,2018, University of Kashmir
14. Session Session chair, Joint International Conference on Interdisciplinary Research and 8th International Conference on Quality, Reliability, Infocom Technology and Business Operations, Amity University ,Noida, UP Feb. 8, 2017
15. Capacity-Building Workshop, Institute of Life Long Learning, University of Delhi, Feb.,4,2016, ILLL, University of Delhi, Delhi
16. Towards More Accurate Software Bug Assignment Prediction Model, INBUSH ERA World, Amity Univsity, Noida,2017
17. Quantitative Methods in Open Source Software Evolution: Modeling and Applications, Babasaheb Bheem Rao Ambedkar Central University, Lucknow, 2016.
18. The Way Ahead for Bug-fix time Prediction, ASIA-Pacific Software Engineering Conference (APSEC), New Delhi, India, 2015.
19. Post release versions based code change quality metrics, Women in Computing and Informatics(WCI-2015), School of Engineering & Technology, Kochi, Kerala,2015.
20. Softawre Reliability Engineering, 4th International Conference on Reliability(ICRITO), Amity Institute of Information Technology Amity University Uttar Pradesh, 2015.

21. Software Reliability, 17th Refresher Course in Computer Science and Information Technology, Academic Staff College, JNU, 2014.
22. Understanding the meaning of bug attributes & prediction models, 5th IBM Collaborative Academia Research Exchange, 2013.
23. Measuring the Complexity of Code Changes and its Applications, Amity School of Engineering and Technology, New Delhi, 2013.
24. Workshop on Foundation Course, Centre for Professional Development in Higher Education University of Delhi, 2013.
25. DST, PAC-MS, Department of Mathematics (IIT Bombay), 2012.
26. Instruction executed dependent software reliability growth modeling for open source software by considering change point, INDIACOM, 2010.
27. A reliability growth model for object oriented software developed under concurrent distributed development environment, ICRESH, 2010.
28. A generalised reliability growth model for open source software, ICRESH, 2010.
29. ILLL Workshop Tier-II, University of Delhi, 2010
30. Distribution based changepoint problem with two types of imperfect debugging, INDIACOM, 2009.
31. Reliability Modeling of Open Source Softawre,I-CARE, IBM-IRL Collaborative Academia Research Exchange, IBM Research-India, 2009.
32. ILLL Workshop Tier II, University of Delhi, 2009.
33. Innovative Quality Practices-Six sigma robust design for e-BUSINESS EXCELLENCE, Department of Science and Technology, Govt. of India, New Delhi, 2008.
34. International Conference on Reliability Safety and Quality Engineering, Nuclear Power Corporation of India Limited & Indian Institute of Technology, Bombay, 2008.
35. Considering imperfect debugging and change point concept in discrete software reliability with multiple failure types, National Conference on Mathematical Modeling optimization and their applications, University of Delhi , 2007.
36. On the development of S Shaped Models in Software Reliability, INDIACOM, 2007.
37. On modeling software reliability growth phenomenon for errors of different severity INDIACOM, 2007.
38. Software Reliability, N.C. College of Engineering Israna-132107 (Panipat), 2007.
39. Software Reliability Growth Model for Determining Fault Types, 3rd International

Conference on Reliability and Safety Engineering (INCRESE2007), Udaipur.

40. Effect of changepoint on software reliability growth models using stochastic differential equation, 3rd International Conference on Reliability and Safety Engineering (INCRESE2007), Udaipur, 2007.
41. Software Reliability Growth Model of Fielded Software based on multiple change points using a power function of testing time, ICQRIT, 2006.
42. VLDB Summer School on Frontirs of Database Technology, IIT Delhi, 2004.

Research Projects

Title	Quantitative and Empirical Methods in Open Source Software Evolution: Modeling and Applications Mathematical Research impact centric Support "MATRICS", Science and Engineering Research Board, Department of Science and Technology, Govt.of India, MTR/2019/001564, ongoing
Title	Mathematical Modeling of Quantitative Software Quality Assessment : A Unified Approach
Funding agency	Department of Science and Technology, Government of India
Grant received:	Rs. 10,67000
Period	03 years(completed)
Title	Quantitative Assessment of Software Fault Complexity
Funding agency	University Grants Commission, New Delhi
Grant received:	Rs. 10,0000
Period	01 years(completed)
Title	A Study of Stress Levels and Stress Sources Among undergraduate Students of University of of Delhi
Funding agency	University of Delhi,Delhi
Grant received:	Rs. 10,00000
Period	01 years(completed)

Cloud supported and machine-learning driven efficient IOT based watering system for home based plants", dated 10.12.2021, application number 202111056538 A

Research Supervision

1. Mrs.Madhu Kumari (2020) “Entropy Based Approach for Software Evolution, Bug Severity and Priority Prediction” , University of Delhi
2. Meera Sharma (2017) “Developing Prdiction Models to Assist Software Developers and Support Managers”. University of Delhi
3. K.K. Chaturvdi (2014) “‘Bug Severity Assessment and the Complexity of Code Changes Based Prediction Models”. University of Delhi
4. Saru Dhir (2016) “Requirement Modeling for Agile Processes”, external guide, Amity University
5. Nikita Yadav (2013) “ A Study on Quality Issues in Cloud Computing Services”.
6. Sushil Kumar “Empirical Software Engineering” Persuing, University of Delhi
7. Vinita Verma “Empirical Software Engineering” Persuing, University of Delhi
8. Seema Rani “Empirical Software Engineering” Persuing, University of Delhi
9. Upasana “ Stegnegraphy “ SC & SS, JNU,

Book Published

1. Essential of Computer Network Database Narosa Internet Technology Publisher.2013

Book Chapter

1. “ On the Development of Discrete Software Reliability Growth Models” in the Handbook of Performability Engineering,Misra, Krishna B. (Ed.) 2008, XLVIII, 13 16 p. 408 illus., Hardcover ISBN: 978-1-84800-130-5, Springer Verlag London, pp.1239-1254
2. “Modeling and Analysis of Fault Dependency in Software Reliability Growth Modeling”, in System Reliability Management: Solutions and Technologies, Taylor & Francis, ISBN 9780815360728, 2018

Award

Award for contribution as promising author and Researcher in the field of Computer Science by Society for Reliability Engineering, Quality and Operations Management,New Delhi,India 2012

Offered Courses

MCA/M.Tech.

Object Oriented Programming, Software Engineering, Advanced Software Engineeering