


Title	<b>Dr.</b>	First Name	<b>V.B.</b>	Last Name	<b>Singh</b>	
Designation	<b>Associate Professor</b>					
Department	<b>Computer Science</b>					
Address (Residence)	<b>122/DDA Flats/Sector-05, Dwarka, New Delhi-110075</b>					
Phone No (Residence) <i>optional</i>	<b>011-24109821</b>					
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Email	<a href="mailto:vbsingh.dcac.du.ac.in">vbsingh.dcac.du.ac.in</a>					
Web-Page	<a href="http://dcac.du.ac.in/documents/Faculty/Profile/vbs.pdf">http://dcac.du.ac.in/documents/Faculty/Profile/vbs.pdf</a>					
<b>Courses Taught:</b> <ol style="list-style-type: none"> <li>1. Fundamental s of Computer Science</li> <li>2. Software Engineering</li> <li>3. Operating System</li> <li>4. C,C++, Java,SQL,VB Programming</li> <li>5. DataBase Management System</li> <li>6. Computer Network</li> </ol> <p>Developed Multiple Choice Questions(on line test) for the students of University of Delhi at Institute of Life Long Learning, University of Delhi,Delhi, India</p>						
<b>Education</b>						
Subject	Institution	Year	Details			
<b>Ph.D.</b>	<b>University of Delhi</b>	<b>2008</b>	Thesis topic: Software Reliability			
<b>M.C.A.</b>	<b>M.M.M.Eng.College Gorakhpur,UP</b>	<b>1996</b>	Subjects:Computer Application			
<b>B.Sc.</b>	<b>U.P.College, Varanasi, UP</b>	<b>1992</b>	Subjects:Physics, Math, Stat.			
<b>Career Profile</b>						
Organisation / Institution	Designation	Duration	Role			
<b>Delhi College of Arts&amp; Commerce(University of Delhi)</b>	<b>Associate Professor</b>	<b>23-9-2010 to till date</b>	<b>Teaching and Research</b>			
<b>Delhi College of Arts&amp; Commerce(University of Delhi)</b>	<b>Reader</b>	<b>23-9-2007-23.9.2010</b>	<b>Teaching and Research</b>			
<b>Delhi College of Arts&amp; Commerce(University of Delhi)</b>	<b>Lecturer and Sr.Lecturer</b>	<b>23-9-1996-2007</b>	<b>Teaching and Research</b>			
<b>Research Interests / Specialization</b>						
<b>Ph.D. Supervision:</b>						
<ol style="list-style-type: none"> <li>1. Nikita Yadav awarded</li> <li>2. K.K. Chaturvedi awarded</li> </ol>						

- 3.. Mrs. Meera Sharma, pursuing
- 4. Mrs. Namrata Yadav ,pursuing
- 5.Mrs.Madhu Kumari,pursuing

**Area specialization :** Mining Software Repositories , Empirical Software Engineering,BIG Data Software Engineering

Member of Committees/reviewer/Editorial Board

- **Member:** Program Advisory Committee, Big Data Initiative, Department of Science and Technology, Govt. of India
- **Reviewer:** IEEE Transactions on Software Reliability, IEEE Transactions on Software Engineering, International Journal of System Assurance Engineering and Management, International Journal of Metaheuristics (IJMHEUR), International Journal of Knowledge Engineering and Data Mining, International Journal of Technology Marketing,Journal of Software: Evolution and Process,Engineering Science and Technology, an International Journal
- **Member Editorial Board:** International Journal of System Assurance Engineering and Management, Journal of Software, Advances in Analytics (USA),International Journal of Computer Application

Teaching Experience ( Subjects/Courses Taught)

17 years(UG), Software Engineering, DBMS,C,C++,Data Structure, Operating System M.Sc.(OR), and M.Sc./M.A.(AOR) DBMS and Software Engineering

Honors & Awards

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

Publications

Books / Monographs

<u>Year of Publication</u>	<u>Title</u>	<u>Publisher</u>	<u>Co-Author</u>
2013	Essential of Computer Network Database and Internet Technology	Narosa Publisher	Dr.V.S.Dixit

In Indexed/ Peer Reviewed Journals

**Book Chapter**

1. Contributed a chapter " On the Development of Discrete Software Reliability Growth

Models” in the Book Handbook of Performability Engineering, Misra, Krishna B. (Ed.) 2008, XLVIII, 1316 p. 408 illus., Hardcover ISBN: 978-1-84800-130-5, Springer Verlag London, pp.1239-1254

### Papers in Journals

1. Dheer Sharu, Kumar Deepak, Singh VB International Journal of Process Management and Benchmarking (IJPMB) , Inderscience, Accepted, 2016
2. Chaturvedi K. K. , Kapur P. K. , Anand Sameer , **Singh V. B.** Predicting the complexity of code changes using entropy based measures. Int. J. Systems Assurance Engineering and Management, Springer, 5(2): 155-164 (2014),
3. Sharma Meera, Bedi Punam and **Singh V.B** “Empirical evaluation of cross project priority prediction” accepted for publication in International Journal of Systems Assurance Engineering and Management (IJSA), Springer, December 2014, Volume 5, Issue 4, pp 651-663
4. Singh, VB, Chaturvedi, KK, Khatri, S.K., Kumar, V. (2013). Bug prediction modeling using complexity of code changes. International Journal of System Assurance Engineering and Management. DOI 10.1007/s13198-014-0242-5. [Springer]
5. Kapur P.K., **Singh V B** , Kumar Jyotish and Singh Ompal “ Software Release Time Based on Different Multiattribute Functions, International Journal Reliability, Quality and Safety Engineering, World Scientific Publication, **20**, 1350012 (2013) [15 pages]
6. Yadav Nikita, Khatri Sujata and Singh V. B. (2014) “ Developing an Intelligent Cloud Computing for Higher Education” ACM Sigsoft, USA, Volume 39 Issue 1, Pages 1-5
7. Yadav Nikita and Kumari Madhu and **Singh V.B.** “ Generalized Reliability Model for Cloud Computing” International Journal of Computer Application, Volume 88-Number 14, pp 0975 – 8887
8. Yadav Nikita and **Singh V.B.**, Quality Issues in Infrastructure as a Service , IJCSI International Journal of Computer Science Issues, Vol. 10, Issue 5, No 2, September 2013 ISSN (Print): 1694-0814 | ISSN (Online): 1694-0784
9. **Singh, V.B.** and Chaturvedi, K.K. (2013). Bug Prediction using Entropy Based Measures. International Journal of Knowledge Engineering and Data Mining. [In Press].[Inderscience] 2(4):266-291. [Inderscience]
10. **Singh, V.B.** and Chaturvedi, K.K. (2013). “Improving the Quality of Software by Quantifying the Code Change Metric and Predicting the Bugs”. In B. Murgante et al. (Eds.): ICCSA 2013, Part II, LNCS 7972, pp. 408–426, 2013. © Springer-Verlag Berlin Heidelberg 2013.e-ISBN 978-3-642-39643-4

11. Chaturvedi, K.K. and **Singh, V.B.** (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*. 4(2): 32-59. [IGI Global]ISSN 1942-3926
12. Yadav Nikita and **Singh V.B.** “E-Governance: Past, Present and Future in India” *International Journal of Computer Applications (0975 – 8887) Volume 53– No.7, September 2012*,pp.36-48.ISSN 1076-5204
13. **Singh V.B.** and Chaturvedi Krishna Kumar “Bug Tracking and Reliability Assessment System (BTRAS)”**International Journal of Software Engineering & Applications**, Vol. 5 No. 4, October, 2011,pp.1-14 , ISSN0976-2221
14. KhatriSujata, Chhilar R.S. and **Singh V.B.** “Improving the Testability of Object Oriented Software using Reliability Growth Models” *International Journal of Computer Applications (0975 – 8887) Volume 35– No.11, December, 2012 pp.24-35*, ISSN 1076-5204
15. Khatri Sujata, Chhilar R.S. and **Singh V.B.** “ Measuring Bug Complexity in Object Oriented Software” **ACM SIGSOFT**, Volume 36 Issue 6, November 2011 Pages 1-8, NY, USA, ISSN 0163-5948
16. **Singh V.B.** , Kapur P. K and BasirzadehMashaallah“ Open Source Software Reliability Growth Model by Considering Change- Point”,*BVICAM’s International Journal of Information Technology*, Issue 7:(January-July, 2012 Vol.4 No.1),pp.1-6, ISSN 0973-5658
17. **Singh V.B.**, Kapur P.K. and Abhishek Tandon “Measuring Reliability Growth of Software by Considering Fault Dependency, Debugging Time Lag Functions and Irregular Fluctuation” published in **ACM SIGSOFT** Software Engineering notes, May issue Vol. 25, No. 3 2010, ISSN 0163-5948
18. Singh O.P. **Singh V.B.**, Kumar Jyotish and Kapur P.K. “Generalized Software Reliability Growth Model for Fault detection–correction process incorporating Change-Point”, **Communications in Dependability and Quality Management: An International Journal**, Serbia,Vol.12, No. 1, pp. 35-46, March 2009, ISSN 1450-7196
19. Kapur P.K. Anand Sameer and **Singh V.B.** “Distribution based Software Reliability Growth Model with Change-Point and Two types of Imperfect Debugging” **BVICAM’s International Journal of Information Technology**,2009, Vol., 1, No. 2, pp.29-34, ISSN 0973-5658.
20. P.K.Kapur, **V.B.Singh**, Sameer Anand and V.S.S. Yadavalli, “Software Reliability Growth Model with Change-Point and Effort Control Using a Power Function of Testing Time” **International Journal of Production Research**, Vol. 46 Issue no. 3 pp.771-787 , 2008. Taylor and Francis,*ISSN 0020-7543*
21. **V.B.Singh**, KalpanaYadav, Reecha Kapur and V.S.S Yadavalli, “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**, Vol.4, No.4, PP.359-368, 2007. Springer *ISSN*: 1751-8520

22. P.K.Kapur, **V.B.Singh** and Sameer Anand, “Fault Dependency Based Software Reliability Growth Modeling with Debugging Time Lag Functions”, **Communications in Dependability and Quality Management An International Journal**, Serbia, Vol.10 No.3, pp. 46-68, 2007, *ISSN* 1450-7196

23. P.K.Kapur, **V.B.Singh**, Sameer Anand and V.S.S. Yadavalli, “An Innovation Diffusion Model Incorporating Change in Adoption Rate” **Management Dynamics**, Vol. 16, No.1, pp. 33-40, 2007,*ISSN*: 1019-567X

#### **Papers published in Proceedings**

1. Meera Sharma, Madhu Kumari and **V. B. Singh**. The Way Ahead for Bug-fix time Prediction. 3<sup>rd</sup> 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.
2. Meera Sharma, Madhu Kumari and **V. B. Singh**. Post Release Versions based Code Change Quality Metrics. 3<sup>rd</sup> International Symposium on Women in Computing and Informatics (WCI-2015) co-located with Fourth International Conference on Advances in Computing, Communications and Informatics (ICACCI-2015), August 10-13, 2015, Kochi, Kerala, India. pp. 235-243.
3. Meera Sharma, Madhu Kumari and **V. B. Singh**. Bug Assignee Prediction Using Association Rule Mining. 15<sup>th</sup> International Conference on Computational Science and Its Applications (ICCSA). June 22-25, 2015, University of Calgary at Banff, Canada LNCS, Springer. pp. 444-457
4. Sharma Meera, **Singh V.B.** and Singh R.K. “Bug Assignee Prediction Using Association Rule Mining”, 15th International Conference on Computational Science and Its Applications, ICCSA Computational Science and Its Applications -- ICCSA 2015 Volume 9158 of the series Lecture Notes in Computer Science pp 444-457
5. **Singh V.B.** and Sharma Meera , 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 , IEEE xplore ,pp.478-483
6. Sharma Meera , Singh RK and **Singh V.B.** “Multiattribute Based Machine Learning Models for Severity Prediction in Cross Project Context” 14th International Conference on Computational Science and Its Applications (ICCSA 2014), Computational Science and Its Applications – ICCSA 2014 Springer Lecture Notes in Computer Science Volume 8583, 2014, pp 227-241
  7. Dixit Veer Sain Kundra Bhatia Shveta, **Singh V. B.**: Evaluation of Web Session Cluster Quality Based on Access-Time Dissimilarity and Evolutionary Algorithms. ICCSA (5) Springer Lecture Notes in Computer Science 2014: 297-310
  8. Sharma Meera , Kapur and Singh V B “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, from 27-28 June 2014
  9. Sharma, Meera, Kumari, Madhu and **Singh, VB**, (2013). “Understanding the Meaning of Bug Attributes and Prediction Models”. I-CARE2013 in Proceedings of the 5<sup>th</sup>IBM Collaborative Academia Research Exchange Workshop, Article No. 15, ACM, New York, USA.ISBN: 978-1-4503-2320-8.
  10. 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). pg. 96-102. ISBN: 978-93-81583-85-2.
  11. Chaturvedi, K.K., Bedi, P., Misra, S. and **Singh, V.B.** “An Empirical Validation of the Complexity of Code Changes and Bugs in Predicting the Release Time of Open Source Software” in IEEEproceedings of 13<sup>th</sup> International Conference on Advanced Computer and Information Technology, Sydney, Australia, pp. 1201-1206, ISSN 9780-7695,*IEEE Explore*.
  12. Chaturvedi, K.K., Singh, P., and **Singh, V.B.** (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
  13. Chaturvedi, K.K., **Singh, V.B.** and Khatri, S.K. (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.
14. Chaturvedi, K.K. and **Singh, V.B.** (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.
  15. **Singh, V.B.** and Chaturvedi, K.K. (2012). “Entropy Based Bug Prediction using Support Vector Regression” in IEEE Proceedings of 12<sup>th</sup> International Conference on Intelligent Systems Design and Applications during 27-29 Nov. 2012 at CUSAT, Kochi (India). ISBN: 978-1-4673-5118-8\_c 2012 *IEEE Explore*. pg. 746-751
  16. Chaturvedi K.K. and **Singh V.B** “Predicting the Software Change Complexity using Entropy Based Measures” International Conference on Quality, Reliability ,Infocom Technology and Industrial Technology Management”, held during Nov. 26-28, 2012, University of Delhi, India
  17. Yadav Nikita and **V.B.Singh** “Quality Issues in Cloud Computing Environment” International Conference on Quality, Reliability, InfocomTechnology and Technology Management ,held during Nov. 26-28, 2012, University of Delhi, India
  18. KhatriSujata, O.S.Srivastavaand **Singh V.B.** “Generalized Imperfect Debugging Model for Object Oriented Software”, International Conference on Modeling and Optimization, International Conference on Modeling and Optimization(OPTIMA2012) during Nov.29-Dec.01, 2012, University of Delhi.
  19. Sharma Meera, PunamBedi and **Singh V.B.** “Predicting the Priority of a Reported Bug and Cross Project Validation” International Conference on Intelligent Systems Design and Applications (*ISDA*),Nov.27-29, 2012, pp.539-545,IEEE Explore, *ISSN* : 2164-7143.
  20. **Singh V.B.** “An Imperfect Debugging Model for Object Oriented Software System, Presented in Academic Conference for Multidisciplinary, April, 1-5, 2012, Vienna, Austria.
  21. **Singh V.B.**, KhatriSujata and Kapur P.K. “ 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, 2010, pp.479-484, published by IEEE,*ISSN*: 0163-5948
  22. **Singh V.B** , Kapur P.K. and AbhishekTandon “ 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, 2010, Huwan, China, Volume-2 pp.: 115 - 118 published in **IEEE Xplore**), ISSN 0034-4257.
23. **V.B.Singh**, O.P.Singh, Ravi Kumar, P.K.Kapur “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, 2010, pp. 523-528 , published by IEEE. ISSN: 0163-5948
24. **Singh V.B.**, Kapur P.K. and Ravi Kumar “Developing S-shaped Software Reliability Growth Model for Open Source Software” published in **IASTED International Conference on Software Engineering**, held during February 16-18, 2010. Innsbruck, Austria, Acta press
25. **Singh V.B.** and Kapur P.K. “Measuring Reliability Growth of Open Source Software,” poster presentation in **IBM-Indian Research Laboratory Collaborative Academia Research Exchange**, held during October 26, 2009 at IBM India Research Lab, ISID Campus, Institutional Area, VasantKunj , New Delhi, India.
26. **Singh V.B.** , Kapur P. K and BasirzadehMashaallah “Instructions Executed Dependent Software Reliability Growth Modeling for Open Source Software by Considering Change-point Published in the proceeding of 4<sup>th</sup> National Conference on **Computing for Nation Development-INDIACOM-2010**” BharatiaVidyapith, pp.399-404, New Delhi, 25-26 February, 2010, ISSN 0973-7529
27. **Singh V.B.**, Kapur P.K. and Kumar Ravi “ Instructions Executed Dependent Reliability Growth Modeling for Open Source Software by Applying Stochastic Differential Equations” presented in **Fourth International Conference on Quality , Reliability and Infocom Technology**, to be held during Dec. 18-20, 2009 at Conference Center, University of Delhi.
28. Kapur P.K. Anand Sameer and **Singh V.B.** “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
29. Kapur P. K **Singh V.B.** and BasirzadehMashaallah “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, P.K.Kapur and S.G. Ghadge ) MacMillan



India Ltd,2008, pp. 839-849, -ISBN 13: 978-0230634411

30. Kapur P. K **Singh V.B.** and Anand Sameer “Effect of change-point on software reliability growth models using stochastic differential equation” 3<sup>rd</sup>*International Conference on Reliability and Safety Engineering (INCRESE-2007)*, Udaipur, held during 17-19 December, 2007, pp. 320-333.
31. Kapur P. K **Singh V.B.** and Yang Bo “Software Reliability Growth Model for Determining Fault Types” 3<sup>rd</sup>*International Conference on Reliability and Safety Engineering (INCRESE-2007)*, Udaipur, held during 17-19 December, 2007, 334-349.
32. KapurP.K.**Singh V.B.**,Jha P.C. “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* pp.295-298, ISBN 0973-7529
33. KapurP.K.,Kumar A. **Singh V.B.** NailamaF.M.” 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*,pp. 279-284, ISBN 0973-7529
34. Kapur P. K, **Singh V. B.**, YadavKalpana “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.,2007,587-595, ISBN: 9780230634015
35. Kapur P. K, **Singh V. B.**,Kumar Ravi, and Prashant Johari " 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
36. Kapur P. K, **Singh V. B.**,Kumar Ravi, and Prashant Johari ,Considering Imperfect Debugging and Change-Point Concept in Discrete Software Reliability in Distributed Environment., ,in the Proceedings Mathematical Modeling Optimization and their Application, Narosa, pp199-209 ISBN 978-81-8487-067-01
37. Kapur P. K, **Singh V. B.**, Anand Sameer “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.,2007,pp.171-178, ISBN: 9780230634015

38. P.K.Kapur, Amit Gupta, Sunil K. Khatri and **V.B.Singh**, “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.

Public Service / University Service / Consulting Activity/College Committee members

**Coordinator-ICT**

Professional Societies Memberships

**ACM** ( Association of Computing Machinery)

Executive Member, Society for Reliability Engineering , Quality and Operations Management (SREQOM)

Projects (Major Grants / Collaborations)

1. Mathematical Modeling of Quantitative Software Quality Assessment: A Unified Approach Sanction No. SR/S/MS: 600/09 dated 22.10.2009, Department of Science and Technology, Govt. of India

2. Minor project titled “Quantitative Assessment of Software Fault Complexity”. Sanctioned by University Grants Commission. F.8-1(77)2010(MRP/NRCB).(completed)

2. Innovation project titled “A STUDY OF STRESS LEVELS AND STRESS SOURCES AMONG UNDERGRADUATE STUDENTS OF UNIVERSITY OF DELHI FROM UNIVERSITY OF DELHI.

Other Details