# Swami Shraddhanand College
# University of Delhi

## Research Guidance by Prof. Meera Sharma

| Level of Guidance | Title of Thesis | Thesis Submitted | Degree Awarded |
|---|---|---|---|
| Ph.D. | Entropy based Approach for Software Evolution, Bug Severity and Priority Prediction | 10th August 2020 Viva done on 05th August, 2021 | 18.08.2021 |
| Ph.D. | Malware Detection for Windows Operating System | 20th June 2022 Viva done on 10th February, 2021 | 17.02.2023 |
| Ph.D. | Prediction Models for Orthogonal Defect Classification | 04th August 2023 Viva done on 04th January, 2024 | 11.01.2024 |

## Citations and Other Research Metrics

### Google Scholar

| | |
|---|---|
| **Citations** | 384 |
| **h-index** | 11 |
| **i10-index** | 14 |

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## International Journal Papers

1.      Sharma, M., Kumari, M., Singh, V. B., Bug summary entropy based training candidates identification in cross project severity prediction. 2023 International Journal of System Assurance Engineering and Management, 1-34.

2.      Kumari, M., Singh, V. B., Sharma, M., Evaluating the Veracity of Software Bug Reports using Entropy-based Measures. 2022, International Journal of Open Source Software and Processes (IJOSSP), 13(1), 1-21.

3.      Kumar, S., Sharma, M., Muttoo, S. K., Singh, V. B., Inter project defect classification based on word embedding. 2022, International Journal of System Assurance Engineering and Management, 1-14.

4.      Tandon, A., Sharma, M., Kumari, M., Singh, V. B., Entropy based Software Reliability Growth Modelling for Open Source Software Evolution, April 2020, Technical Gazette, 27(2), 550-557. Impact Factor: 0.783.

5.      Sharma, M., Kumari, M., Singh, V. B., Multi-attribute dependent bug severity and fix time prediction modeling, September 2019, International Journal of System Assurance Engineering and Management, 10(5), 1328-1352.

6.      Sharma, M., Pham, H., Singh, V.B., Modeling and analysis of leftover issues and release time planning in multi-release open source software using entropy based measure, January 2019, International Journal of Computer Systems Science & Engineering, 34(1), pp. 33-46. Impact Factor: 1.486.

7.      Kumari, M., Sharma, M., Singh, V.B., Severity Assessment of a Reported Bug by Considering its Uncertainty and Irregular State, 2018, International Journal of Open Source Software and Processes, 9(4), pp.20-47, DOI: 10.4018/IJOSSP.2018100102.

8.      Singh, V.B., Sharma, M., Pham, H., Entropy based software reliability analysis of multi-version open source software, 2018, IEEE Transactions on Software Engineering, 44(12), 8081836, pp. 1207-1223. Impact Factor: 6.112.

9.      Raghuvanshi, K. K., Rajput, A., Sharma, M., An Investigation of Entropy Based Models for Measuring Reliability Growth of Open Source Software Projects and Related Release Time Planning, IJRECE VOL. 6 ISSUE 2 APR.-JUNE 2018.

10.     Chaturvedi, K.K., Sharma, M., Khatri, S., Raghuvanshi, K.K., Rajput, A., Mining Software Engineering Repositories: Issues and Challenges, IJRECE VOL. 5 ISSUE 4 OCT.-DEC 2017.

11.     Sharma, M., Tandon, A., Kumari, M., Singh, V.B., Reduction of Redundant Rules in Association Rule Mining-Based Bug Assignment, 2017, International Journal of Reliability, Quality and Safety Engineering, 24(6), 1740005.

12. Singh, V.B., Misra, S., Sharma, M., Bug Severity Assessment in Cross Project Context and Identifying Training Candidates, 2017, Journal of Information and Knowledge Management, 16(1), 1750005.

13. Sharma, M., Singh, V.B., Clustering-based association rule mining for bug assignee prediction, 2016, International Journal of Business Intelligence and Data Mining, 11(2), pp. 130-150.

14. Sharma, M., Bedi, P., Singh, V.B., An empirical evaluation of cross project priority prediction, 2014, International Journal of Systems Assurance Engineering and Management, 5(4), pp. 651-663.

15. Kumari, M., Sharma, M., Yadav, N. (2014). Understanding the Developer Participation in Bug Fix Process. International Journal of Computers and Technology. 12(10), pp. 3823-3828. ISSN 2277-3061. Indexed in Google scholar.

16. Kumari, M., Sharma, M., Kumar, A. (2014). A Review of research work in software engineering. Int. J. Eng. Comput. Sci, 3, 5288-5298.

17. Singh, V. B., Sharma, M., Khatri, S., Srivastava, O. S. (2013). Mathematical Modeling of Software Bug Complexity. Covenant Journal of Informatics and Communication Technology, 1(1), pp. 29-36.

# International Conference Papers

1. Kumar, S., Sharma, M., Muttoo, S. K., Singh, V. B., Autoclassify software defects using orthogonal defect classification. The 22nd International Conference on Computational Science and Its Applications (ICCSA 2022) July 4-7, 2022 in collaboration with the University of Malaga, Spain.

2. Kumar, S., Sharma, M., Singh, V. B., Muttoo, S. K., Bug Report Classification into Orthogonal Defect Classification Defect Type using Long Short Term Memory. 2021, In 3rd International Conference on Advances in Computing, Communication Control and Networking (ICAC3N) (pp. 285-287). IEEE.

3. Kumari, M., Singh, U. K., Sharma, M., Entropy Based Machine Learning Models for Software Bug Severity Assessment in Cross Project Context, July 2020, In 20th International Conference on Computational Science and Its Applications, Cagliari, Italy, July 1–4, 2020, Lecture Notes in Computer Science 12254 (pp. 939-953). Springer, Cham.

4. Kumari, M., Sharma, M., Anand, S., Singh, V. B., Predicting the Fix Time of a Reported Bug using Radoop: A Big Data Approach, 2020, In Decision Analytics Applications in Industry (pp. 259-269). Springer, Singapore.

5. Sharma, M., Kumari, M., Singh, V. B., Bug Priority Assessment in Cross-Project Context Using Entropy-Based Measure, 2019, In Advances in Machine Learning and Computational Intelligence (pp. 113-128). Springer, Singapore.

6. Rani, K. S., Kumari, M., Singh, V. B., Sharma, M., Deep Learning with Big Data: An Emerging Trend, 2019, In 2019 19th International Conference on Computational Science and Its Applications (ICCSA) (pp. 93-101). IEEE.

7. Raghuvanshi, K.K., Sharma, M., Tandon, A., Singh, V.B., Quantitative quality assessment of open source software by considering new features and feature improvements, 2018, Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 10964 LNCS, pp. 412-423.

8. Sharma, M., Tondon, A., Developing prediction models to assist software developers and support managers, 2017, Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 10408 LNCS, pp. 548-560.

9. Singh, V.B., Chaturvedi, K.K., Khatri, S., Sharma, M., Complexity of the code changes and issues dependent approach to determine the release time of software product, 2017, Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 10408 LNCS, pp. 519-529.

10.     Sharma, M., Kumari, M., Singh, V.B., Post Release Versions based Code Change Quality Metrics. Third 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.

11.     Sharma, M., Kumari, M., Singh, V.B., The way ahead for bug-fix time prediction, 2015, CEUR Workshop Proceedings, 1519, pp. 31-38.

12.     Sharma, M., Kumari, M., Singh, V.B., Bug assignee prediction using association rule mining, 2015, Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 9158, pp. 444-457.

13.     Singh, V.B., Sharma, M., Kapur, P.K., Understanding Software Repositories and Dynamics of Software Evolution. In Proceedings of the 5th International Conference on Life Cycle Engineering and Management (ICDQM). 27-28 June, 2014, Belgrade, Serbia.

14.     Sharma, M., Singh, V.B., Multiattribute based Bug Severity Prediction. In Proceedings of the 5th International Conference on Life Cycle Engineering and Management (ICDQM). 27-28 June, 2014, Belgrade, Serbia.

15.     Singh, V.B., Sharma, M., Prediction of the complexity of code changes based on number of open bugs, new feature and feature improvement 2014 Proceedings - IEEE 25th International Symposium on Software Reliability Engineering Workshops, ISSREW 2014, 6983889, pp. 478-483.

16.     Sharma, M., Kumari, M., Singh, R.K., Singh, V.B., Multiattribute based machine learning models for severity prediction in cross project context, 2014, Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 8583 LNCS(PART 5), pp. 227-241.

17.     Sharma, M., Kumari, M., Singh, V.B., Understanding the meaning of bug attributes and prediction models 2013, ACM International Conference Proceeding Series 15.

18.     Sharma, M., Chaturvedi, K.K., Singh, V.B., Severity Prediction of Bug Reports in Cross Project Context. In Proceedings of International Conference on Reliability, Infocom Technologies and Optimization (ICRITO), 29-31 January 2013. Amity University, Noida, UP (India). pp. 96-102. ISBN: 978-93-81583-85-2.

19.     Sharma, M., Bedi, P., Chaturvedi, K.K., Singh, V.B., Predicting the priority of a reported bug using machine learning techniques and cross project validation, 2012, International Conference on Intelligent Systems Design and Applications, ISDA, 6416595, pp. 539-545.

## Chapters in Edited Books

1.     "Multiattribute Based Machine Learning Models for Severity Prediction in Cross Project Context", In Lecture Notes in Computer Science (LNCS 8583), Jun 30 2014, 8583 LNCS (PART 5), pp. 227-241, Springer International Publishing Switzerland 2014, 978-3-319-09155-6

2.     "Bug Assignee Prediction Using Association Rule Mining", In Lecture Notes in Computer Science (LNCS 9158), 2015, 9158 LNCS, pp. 444-457, Springer International Publishing Switzerland 2015, 978-3-319-21409-2

3.     "Developing prediction models to assist software developers and support managers", In Lecture Notes in Computer Science (LNCS 10408), 2017, 10408 LNCS (PART V), pp. 548-560, Springer International Publishing AG Switzerland 2017, 978-3-319-62403-7

4.     "Complexity of the Code Changes and Issues Dependent Approach to Determine the Release Time of Software Product", In Lecture Notes in Computer Science (LNCS  10408), 2017, 10408 LNCS (PART V), pp. 519-529, Springer International Publishing AG Switzerland 2017, 978-3-319-62403-7

5.     "Quantitative Quality Assessment of Open Source Software by considering New Features and Feature Improvements", In Lecture Notes in Computer Science (LNCS 10964), 2018, 10964 LNCS (PART V), pp. 412-423, Springer International Publishing AG, part of Springer Nature 2018 Switzerland, 978-3-319-95173-7

6.     "Bug Priority Assessment in Cross-Project Context Using Entropy-Based Measure", In Algorithms for Intelligent Systems Advances in Machine Learning and Computational Intelligence, 2021, pp. 113-128, Springer Nature Singapore Pte Ltd. 2021, 978-981-15-5242-7

7.     "Machine Learning Based Software Defect Categorization Using Crowd Labeling", In Predictive Analytics in System Reliability, 2023, pp. 1-16, Springer Nature Switzerland AG 2023, 978-3-031-05346-7

8.     "Removing Stegomalware from Digital Image Files", In Mishra, A., Gupta, D., Chetty, G. (eds) Advances in IoT and Security with Computational Intelligence. ICAISA 2023. Lecture Notes in Networks and Systems, vol 755, pp 15-26. Springer, Singapore. https://doi.org/10.1007/978-981-99-5085-0_2

## Papers Presented

1.      Presented paper "Mining Open Source Software Repositories" in 4th International Conference on Quality, Reliability and Infocom Technology (ICQRIT) (Trends and Future Directions), December 18-20, 2009 workshop on Mathematical Modeling and Related Optimization Techniques December 14-17, 2009 held at University of Delhi.

2.      Presented paper "Severity Prediction of Bug Report in Cross Project Context" in International Conference on Reliability, Infocom Technologies and Optimization (ICRITO 2013) (Trends and Future Directions), January 29-31, 2013 held at Amity University, Noida, UP (India).

3.      Presented Research Showcase "Understanding the Meaning of Bug Attributes and Prediction Models" in 5th IBM Collaborative Academia Research Exchange, (I-CARE 2013), October 17-19, 2013 held at IIT, Delhi.

4.      Presented paper "Post Release Versions based Code Change Quality Metrics" in 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-2015), August 10-13, 2015 held at SCMS School of Engineering & Technology, Kochi, Kerala, India.

5.      Presented paper "The Way Ahead for Bug-Fix Time Prediction" in proceedings of the 3rd International Workshop on Quantitative Approaches to Software Quality (QuASoQ2015, CEUR Workshop Proceedings) co-located with Asia-Pacific Software Engineering Conference December 1-4, 2015 at New Delhi, India.

6.      Presented paper "Roadmap Ahead OSS Release Time Planning" in 7th International Conference on Quality, Reliability and Infocom Technology and Business Operations (Trends and Future Directions), December 28-30, 2015 held at Conference Centre, University of Delhi, Delhi.

7.      Presented paper "Towards More Accurate Software Bug Assignment Prediction Model" in Joint International Conference on Interdisciplinary Research & 8th International Conference on Quality, Reliability and Infocom Technology and Business Operations, February 08-10, 2017 held at Amity University, Noida, UP (India).

8.      Presented paper "Entropy based Software Reliability Analysis of Multi-Version Open Source Software" at IRISS 2018 ACM India, February 16, 2018 at Nagpur.

9.      Presented paper "Analyzing Software Evolution through New Features, Feature Improvements and the Complexity of Code Changes Views" in Conference on Software Engineering and Data Sciences (CoSEDS 2018), June 20-21, 2018 at University of Kashmir.

10.     Presented paper "Predicting the Fix Time of a Reported Bug using Radoop : A Big Data Approach" in 9th International Conference on Quality, Reliability, Infocom Technology & Business Operations (Trends and Future Directions), December 27-29, 2018 at University of

Delhi.

11.     Presented paper "Bug Priority Assessment in Cross Project context using Entropy based Measure" in International Conference on Machine Learning and Computational Intelligence (ICMLCI), 14-15 December, 2019, organized by Interscience Research Network (IRNet), Bhubaneswar, Odisha, India.

12.     Presented paper "Entropy based Machine Learning Models for Software Bug Severity Assessment in Cross Project Context" in 20th International Conference on Computational Science and Its application (ICCSA 2020), held online as a virtual conference, co-organised by the University of Cagliari, Italy, 1-4 July 2020.

13.     Presented paper "Programming Constructs Based Bug Prediction Using Entropy" in 3rd International Conference on Recent Trends in Engineering, Technology and Business Management (Digitization Transformation and Business Operations) 24th International Business Horizon-INBUSH ERA World Summit 2024 held on February 21st – 23rd, 2024 at Amity University, Noida, India.