



Vishal Pradhan

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OBJECTIVE

Actively seeking for a position in Teaching and Research & Development in Reliability, Optimization, and Soft-computing techniques to gain teaching expertise and acquire new knowledge.

EDUCATION

- **PhD in Applied Mathematics [Thesis submitted]** Jul 2016-Till date
ABV-Indian Institute of Information Technology and Management (ABV-IIITM Gwalior), Gwalior, MP
- **M.Sc. in Applied Mathematics [68.90%]** Jul 2013 - Jun 2015
South Asian University (SAU), New Delhi
- **B.Sc. in Physical Sciences [65.94%]** Jul 2010 - Jun 2013
University Of Delhi (DU), Rajdhani College, New Delhi

RESEARCH INTEREST

Software Reliability, Stochastic Modelling, Soft-computing, Optimization

RESEARCH/PROFESSIONAL EXPERIENCE

Mathematical Modelling & Simulation Lab

PhD Scholar

ABV-IIITM, Gwalior, MP

Jul 2016 - Till-date

- Designed and implemented a novel reliability growth models to enhance the reliability estimation performance and prediction capability during the testing for software systems.
- Designed and implemented a novel multi-release software reliability growth models using various environmental factors.

N-computing Lab

M.Sc.

ABV-IIITM, Gwalior, MP

Jul 2013 - May 2015

- Excursion to the Theory of Social Networks (M.Sc. Thesis).

RESEARCH OUTCOMES

Published/Accepted Research (2-SCI, 1-ESCI, 3-Book chapter, 1-Conference proceeding)

- **Vishal Pradhan**, Ajay Kumar, Joydip Dhar, "Modelling Software Reliability Growth through Generalized Inflection S-Shaped Fault Reduction Factor and Optimal Release Time," Proceedings of the Institution of Mechanical Engineers, Part O: Journal of Risk and Reliability, 2022;236(1):18-36. doi:10.1177/1748006X211033713
- **Vishal Pradhan**, Joydip Dhar, Ajay Kumar, "Testing-Effort based NHPP Software Reliability Growth Model with Change-point Approach," Journal of Information Science and Engineering, 2022;38(2).
- **Vishal Pradhan**, Ajay Kumar, Joydip Dhar, "Enhanced Growth Model for Software Reliability with Generalized Inflection S-Shaped Testing-Effort Function," Journal of Interdisciplinary Mathematics, 2021, 24(7). doi: 10.1080/09720502.2021.2006329
- **Vishal Pradhan**, Joydip Dhar, Ajay Kumar, Ashish Bhargava, "An S-Shaped Fault Detection and Correction SRGM Subject to Gamma-Distributed Random Field Environment and Release Time Optimization," in Decision Analytics Applications in Industry, Springer, 2020, pp. 285-300. https://doi.org/10.1007/978-981-15-3643-4_22

- **Vishal Pradhan**, Ajay Kumar, Joydip Dhar, "Modelling Multi-release Open Source Software Reliability Growth Process with Generalized Modified Weibull-distribution," in *Evolving Software Processes: Trends and Future Directions*, Wiley, 2021. ISBN:9781119821267
- **Vishal Pradhan**, Ajay Kumar, Joydip Dhar, Software Reliability Models and Multi-Attribute Utility Function based Strategic Decision for Release Time Optimization, in *Predictive Analytics in System Reliability*, Springer, 2021. (Accepted)
- **Vishal Pradhan**, Ajay Kumar, Joydip Dhar, "SRGMs with Uncertainty of Operating Environments for Software Reliability Assessment: A Factor-based Survey," in 26th ISSAT International Conference on Reliability and Quality in Design, 2021, pp. 256-260. ISBN-978-0-9910576-9-6

Research in Under Revision/Review (3-SCI, 1-Book chapter)

- **Vishal Pradhan**, Joydip Dhar, Ajay Kumar, "Modelling NHPP Software Reliability Growth considering Fault Removal Efficiency, Error Generation and Uncertainty in Operating Environment," *Quality and Reliability Engineering International*, 2020. (Under Revision)
- **Vishal Pradhan**, Joydip Dhar, Ajay Kumar, "A Detailed Study of Quantitative Software Reliability Assessment based on NHPP Model for Nuclear Power Plant Digital Control System," *Annals of Nuclear Energy*, 2021. (Under Review)
- **Vishal Pradhan**, Ankush Jain, Ajay Kumar, Joydip Dhar, "Study of NHPP based Software Reliability Models Parameter Estimation through Meta-heuristic Optimization Algorithms," *Journal of Systems Architecture*, 2021. (Submitted)
- **Vishal Pradhan**, Ajay Kumar, Joydip Dhar, "Emerging Trends and Future Directions in Software Reliability Growth Modelling," in *Engineering Reliability and Risk Assessment*, Elsevier, 2021. (Under Revision)

TECHNICAL SKILLS

- **Tools:** Latex, MS-Excel, Matlab, Mathematica, SPSS, Gnuplot, and Origin.

ACHIEVEMENTS

- Qualified CSIR-NET- Dec-2015.

Award/Honors/Scholarships

- Avail MHRD teaching assistant fellowship (JRF+SRF).
- Awarded Fellowship for Training of Young Scientists (FTYS) by M.P. Council of Science and Technology.

Extra curricular activity

- NCC- C certificate holder-2013, DU, and NSS- College Unit President(2012-2013), DU.
- Secured 2nd position in Poster Competition in ARITY-2011 (The Mathematical Society Of Rajdhani College, DU).
- Hostel Committee Representative from INDIA (2015, SAU).
- Core-Organiser of Hoste Festival ExplorAsian 2015 SAU.
- Secured 2nd place in Triathlon at Urja-19 (ABV-IIITM, Gwalior).
- Treasurer of IEEE Student Branch at ABV-IIITM Gwalior.

Membership

- IEEE Student Membership
- MathTech Thinking Foundation
- Gyancity Research Labs
- Gnedenko e-Forum (International Group on Reliability)

Coursera Course Certificate

- Matrix Algebra for Engineers (May 14, 2020)
- Statistics for Researchers: Understanding Medation, Moderation and Beyond (June 14, 2020)

Workshops, Faculty Development Programs, Short-term Programs, & Conferences

i Workshops

- “Application of Computer Software in Mathematical Modelling” organized by Commission for Scientific and Technical Terminology, May 16-17, 2014 at GGSIPU, Nwe Delhi.
- “Advanced Workshop on Finite Difference Methods for Differential Equations” March 13-17, 2015 at South Asian University, Nwe Delhi.
- “International Workshop on Soft Computing and Applications” March 25-27, 2015 at South Asian University, Nwe Delhi.
- “Theory and Applications of Mathematical and Computational Modeling” Sep. 24-25, 2016 at ABV-IIITM Gwalior.
- “National workshop on Mathematical Modelling and Computational Techniques using Mathematica” March 30-31, 2017 at Zakir Husain Delhi College, Delhi.
- “Numerical Techniques for Partial Differential Equations” July 10-14, 2017 at VNIT Nagpur.
- “Certificate Course on Digital Marketing” Nov. 9-10, 2017 at ABV-IIITM, Gwalior.

ii Faculty Development Program

- FDP on Machine Learning and Applications (MLA 2018) March 26-30, 2018 at ABV-IIITM Gwalior.
- FDP on Introduction and Applications of MATLAB in Engineering and Science Nov. 18-22, 2018 at ABV-IIITM Gwalior.
- FDP on Deep Learning and Application May 27-31, 2019 at ABV-IIITM Gwalior.
- FDP on Deep Learning and Application Dec. 09-13, 2019 at ABV-IIITM Gwalior.

iii Short Term Course

- A short term course under GIAN on Reliability Engineering and Asset Management March 19-23, 2018 at IIT Indore.

iv Conferences

- Attended and presented paper in National Conference on Advance in Operations Research and Mathematical Sciences (AORMS-2018) Feb. 24-26, 2018.
- Attended and presented paper in International Conference on Mathematical Modeling and Computation Dec. 01-03, 2018 South Asian University New Delhi.
- Attended and presented paper in 9th International Conference on Quality, Reliability, Infocom Technology and Business Operations Dec. 27-29, 2018, DU, Delhi.
- Attended and presented paper in International Conference on Differential Equations and Control Problems: Modeling Analysis and Computations (ICDECP19) June 17-19, 2019 IIT Mandi HP.
- Attended and presented paper Testing effort and Change-point approach based Software Reliability Growth Modeling Aug 07-09, 2020 JECRC University, Rajasthan.
- Attended “International Conference on Nature Inspired Dynamical Systems,” Sep. 12, 2020 Gujarat University, Gujarat.
- Attended and presented paper in “26th ISSAT International Conference on Reliability & Quality in Design,” Aug 05-07, 2021 Florida USA.

v Training Programme

- Postgraduate level training programme on “Differential Equations” under NPDE-TCA (IIT-Bombay) sponsored by DST, June 2-21, 2014, IIT-Guwahati

"I hereby declare that the information provided is true to the best of my knowledge and belief."

Vishal Pradhan