Yashwant K. Malaiya

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1 Education

Ph.D.	(Electrical Engineering)	Utah State University	1978
M.S.	(Electronics)	BITS, Pilani, India	1974
M.S.	(Physics)	Saugor University, India	1971
B.S.	(Physics, Math)	GD College, Damoh, MP, India	1969

2 Experience

1990-: Professor, Computer Science Dept.
1982-90: Associate Professor, Computer Science Dept., Colorado State University
1978-82: Assistant Professor, Dept. of Computer Science, State Univ. of New York at Binghamton

3 Areas of research emphasis

Quantiative Security, Reliability, Fault modeling and testing, Testable and Fault-tolerant digital design

4 Professional Activities

4.1 Conferences

- General Chair , IEEE **International Symposium on Software Reliability Engineering (ISSRE)**, Denver, 2003.
- General Co-Chair, **IEEE Asian Test Symposium**, Shanghai, 1999.
- General Chair, **The Fourth International Symposium on Software Reliability Engineering (ISSRE)**, Denver, Nov. 1993.
- General Chair, **Sixth International Conference on VLSI Design (VLSI Design '93)**, Bombay, India, 1993.
- Program Chair, **Fifth International Conference on VLSI Design (VLSI Design '92)** , Bangalore, India, 1992.
- General Chair, **24th ACM/IEEE International Symposium on Microarchitecture (Micro-24)**, Albuquerque, 1991.
- General Chair, **IEEE International Workshop on IDDQ Testing (IDDQ-95)**, Washington D.C., October 1995, 2000.
- Chair Steering Committee, **IEEE International Workshop on IDDQ Testing**, 1996, 1997.
- Program Co-Chair, **The Eighth International Symposium on Software Reliability Engineering (ISSRE)**, Albuquerque, Nov. 1997.
- IEEE laision for **International Conference on VLSI Design** 1994-1998.
- Finance chair, The International Symposium on Software Reliability Engineering (ISSRE), Pasadena, 2013.

4.2 Editing

- Guest editor, **IEEE Software**, Special issue on *Reliability Measurement*, July 1992, with P. Srimani.
- Guest Editor, **IEEE Design & Test** , Special issue on *VLSI Design* , Dec. 1992.
- Editor, MicroArch, Quarterly publication of IEEE CS TC on Microprogramming and Microarchitecture (1989-93)

- Digest of Papers - IEEE International Workshop on IDDQ Testing , Washington D.C., Oct. 1995.
- Editor-in-Chief, **Journal of Software Engineering and Applications**, 2011-cont.

4.3 Organizations

- Commissioner, ABET Computing Accreditation Commission, 2005
- Evaluator, Computing Sciences Accreditation Board, 1999-continuing.
- Member Editorial Board, ISRN Software Engineering 2011-cont., Intelligent Information management, 2011.
- PC member**:** ICQRMS 2011, ISSRE 2010, ISSRE 2013.
- Vice chair, **IEEE CS Award Committee (1995-99)** (Service Awards).
- Vice Chair, **TCSE Software Reliability Engineering Committee** (1990-96).
- Chair, **Test Technology TC Subcommittee on Software Testing**, (1993-2002).
- Member, Executive Committee, IEEE CS Technical Activities Board (1988-98); IEEE CS Conference and Tutorials Board (1994, 2000, 2001);
- Chair, **IEEE-CS Technical Committee on Microprogramming and Microarchitecture**, (1988-92).
- Senior Member IEEE Computer Society.

5 Reviewer

- **Journals** : IEEE Computer, IEEE Transactions on Dependable and Secure Computing, IEEE Trans. Computers, IEEE Trans. Reliability, IEEE Trans. Software Engineering, IEEE Software, IEEE Trans. CAD, IEEE Journal of Solid State Circuits, IEEE Trans. VLSI Systems, IEEE Design and Test, IEEE Trans on Systems, Man, and Cybernetics, Software Process: Improvement and Practice, Software Quality Journal, Empirical Software Engineering, Software Testing, Verification and Reliability, Journal of Digital Systems, Journal for Electronic Testing, Naval Research Logistics Quarterly, IEE Electronic Letters, IET Software, Int. Journal of Software Engineering, ISRN Software Engineering, Intelligent Information Management, Journal of Risk and Reliability, Computer Networks, Information Processing Letters, Information and Software Technology
- **Conferences** : Int. Symp. on Software Reliability Engineering, International Symposium on Fault-tolerant Computing, International Test Conference, Design Automation Conference, IEEE Tencon, Int. Symp. and Work. on Microprogramming and Microarchitecture, Asian Test Symposium, VLSI Design, IEEE/IFIP Int Conference on Embedded & Ubiquitous Computing Reliability Engineering & System Safety, IEEE Int. Conf. on Computer Science and Information Technology etc.
- **Funding Agencies** : National Research Council, NSF, Research Grants Council, Hong Kong, Uberoi foundation.
- **Publishers** : Computer Science Press, West Educational Publishing, John Wiley, McGraw-Hill, Asken, Columbia University Press, Cambridge University Press.
- **External Reviewer for Universities** : Roorkee University, State University of New York, Georgia Tech, University of Wyoming, Florida Atlantic University, Chinese University of Hong Kong, West Virginia State, University of Jordan, Thapar University.

6 Courses

Graduate: Fault-Tolerant Computing, Testable Systems, Advanced Fault-Tolerant Computing

Undergraduate: Logic Design, Computer Organization and Assembly Language, Computer Architecture, Interactive Programming with Java, Microprogramming and bit-sliced devices, Microcomputer programming and interfacing, Discrete structures, Data Communications

7 Recognitions

- Keynote, 2014 International Conf. on Knowledge and Software Eng., "Security Vulnerabilities: Risks from Discovery to Exploitation"
- IEEE CS Certificate of Appreciation, 2003, "for exceptional effort as General Chair in organizing and running a successful ISSRE 2003".

- IEEE CS Meritorious Service Award, 2002 “For providing skilled management and guidance to the IEEE International Workshop on Defect Based Testing for over five years”.
- IEEE Third Millennium Medal, 2000.
- Best Paper Award, ISSRE 1997 (see Publications).
- IEEE CS Golden Core Award, June 1996.
- IEEE CS Certificate of Appreciation Award, Oct. 20, 1996 "*For significant leadership contribution to the International IDDQ Test Workshop as Chairman, 1995*"
- IEEE CS Meritorious Service Award, Feb. 1993. *For Tecgnical and administrative leadership while serving as Chair of the Technical Committee on Microprogramming and Microarchitecture*
- Honorary appointment as Professor, Electrical Eng. Dept., CSU.
- Invited lectures at China Academy of Sciences, Beijing, and Shanghai University of Science and Technology (3 weeks), 1989.
- Merit List, University of Saugor, 1971.
- Rotary Club Award: Top B.Sc. student, GD College, Damoh, 1969.
- Sanskrit Scholarship, GMHS School, Damoh, 1963-66.
- Named in *American Men and Women of Science*.

Publications

1 Books/Chapters:

1. Y. K. Malaiya, "Optimal Reliability Allocation," **Wiley Encyclopedia of Operations research and Management Science**, John Wiley & Sons, Jan. 2011.
2. Y.K. Malaiya, "Software Reliability Management," **Encyclopedia of Library and Information Sciences**, Taylor and Francis, Editor: S. Lee, Third Edition, 1: 1, 4901 — 4912, February 2010.
3. Y. K. Malaiya, "Reliability Allocation," **Encyclopedia of Statistics in Quality and Reliability**, John Wiley & Sons, March 2008, 5 pages.
4. Y. K. Malaiya, "Software Reliability and Security," in **Encyclopedia of Library and Information Science**, 2005. Y.K. Malaiya,
5. "Software Reliability", **Encyclopedia of Library and Information Science**, Editors: A. Kent and C.M. Hall, Pub. Marcel Dekker, Inc. 2003, pp. 2688 - 2698.
6. Y.K. Malaiya, "Software Reliability", **Encyclopedia of Library and Information Science**, Editors: A. Kent and C.M. Hall, Pub. Marcel Dekker, Inc. V. 67, May 2000, pp. 341-357.
7. Y.K. Malaiya, "Automated Test Software", for **Wiley Encyclopedia of Electrical and Electronics Engineering**, Editor: J.G. Webster, Pub. John Wiley & Sons, Inc. 1999, pp. 135-141.
8. Karunanithi and Y.K. Malaiya, “Neural Networks for Software Reliability”, Chapter in **Handbook on Software Reliability Enginering**, Ed. M. Lyu, Publisher: McGraw-Hill, 1996. 108. 1
9. Y.K. Malaiya, “Golapurva Anvaya: Eksa Parichaya” (Hindi), in **Golapurva Jain Samaj: Itihas evam Sarvekshana** ed. Dr. Surendra K. Jain, Pub. Paras Research Inst., Sagar, 1996, pp. 32-44.
10. C.C. Liaw, S.Y.H. Su and Y.K. Malaiya, “Test Generation for Delay Faults using Stuck-at Fault Test Set,” **25th Anniversay Compendium of papers**, International Test Conference, 1994, pp. 206-214 (selected for republication).
11. **Bridging Faults and IDDQ Testing**, Editors: Y.K. Malaiya and R. Rajsuman, *IEEE Computer Society Press Technology Series*, 1992.
12. **Software Reliability Models: Theoretical Development, Evaluation and Applications**, Editors: Y.K. Malaiya and P. Srimani, *IEEE Computer Society Press Technology Series*, 1990.
13. Y.K. Malaiya, “Identification of Golladesh and Gollacharya on the basis of Kuvalayamala-kaha,” in **Jaganmohanlal Shastri Felicitation Volume**, JML Sadhuvad Samiti, 1990 (in Hindi) pp. 448-454.
14. Y.K. Malaiya, “On the Golapurva Caste” in **Vyakaranacharya Banshidhar Felicitation Volume**, 1990 (in Hindi), pp. 103-130.
15. C.C. Liaw, S.Y.H. Su and Y.K. Malaiya, “Test Generation for Delay Faults using Stuck-at Fault Test Set,” **VLSI Support Technologies: Computer-Aided Design, Testing and Packaging**, Ed. Rex Rice, IEEE Computer Society Press, 1982, pp. 281-290 (selected for republication).

2 Patents

1. W.K. AlAssadi, A.P. Jayasumana and Y.K. Malaiya, “IDDQ Testing of Integrated Circuits” Patent granted May 26, 1998.

3 Software Tools

1. **ROBUST**, *An integrated Software Reliability tool*. MS Windows, X-Windows, http://www.cs.colostate.edu/testing/robust/.

4 Journals

1 A. A. Younis, Y. K. Malaiya, and I. Ray, "Assessing Vulnerability Exploitability Risk Using Software Proprieties", accepted for Software Quality Journal.

2 A. M. Algarni, Y. K. Malaiya,"Software Vulnerability Markets: Discoverers and Buyers," Int. Journal of Computer, Information Science and Engineering, Vol:8 No:3, 2014, pp. 71-81.

3 H. Joh, Y. K. Malaiya, "Modeling Skewness in Vulnerability Discovery", Quality and Reliability Engineering International, Vol. 30, Issue 8, pp. 1445–1459, Dec. 2014.

4 Y.K. Malaiya, "Jain Renaissance of Fifteenth Century”, Jain Prachin Tirth Jirnoddhar, Year 10, Number 8, p. 24-26, July 2013.

5 S.-W. Woo, H. Joh, O. H. Alhazmi and Y. K. Malaiya, "Modeling Vulnerability Discovery Process in Apache and IIS HTTP Servers", Computers & Security, Vol. 30, Issue 1, 2011, pp. 50-62.

6 S.H. Wu, S. Jandhyala, Y. K. Malaiya, A. P. Jayasumana, "Antirandom Testing: A Distance Based Approach," *VLSI Design*, 2008, 9 pages, 2008. doi:10.1155/2008/165709.

7 O. H. Alhazmi and Y. K. Malaiya, "Application of Vulnerability Discovery Models to Major Operating Systems," *IEEE Trans. Reliability*, March 2008, pp. 14-22.

8 Y. K. Malaiya, “Giants from the Annals of Jain History”, Jinamanjari, 37.1, 2008, 3-29.

9 O. H. Alhazmi, Y. K. Malaiya , I. Ray, " Measuring, Analyzing and Predicting Security Vulnerabilities in Software Systems," *Computers and Security Journal*, Volume 26, Issue 3, May 2007, Pages 219-228.

10 Y.K. Malaiya, N. Li, J. Bieman, R. Karcich, “Software Test Coverage and Reliability,” *IEEE Trans. Reliability*, Dec. 2002, pp. 420-426.

11 Y.K. Malaiya, “Kundalpur’s Past Three Centuries,” *Arhat Vacan*, Vol. 13, no. 3-4, 2001 pp. 5-13.

12 S.M. Menon, Y.K. Malaiya, A.P. Jayasumana and C.Q Tong, “Operational and Test Performance in the Presence of Built-in Current Sensors,” *Int. Journal of VLSI Design*, 1997, V. 5, No. 3, pp. 285-298.

13 S.M. Menon, Y.K. Malaiya and A.P. Jayasumana, “ECL Storage Elements: Modeling of Faulty Behavior,” *IEEE Trans. Circuits & Systems-II*, Nov. 1997, pp. 970-974.

14 M. Menon, A. P. Jayasumana and Y. K. Malaiya, “BiCMOS Domino: A Novel High-Speed Dynamic BiCMOS Logic,” *Int. Journal of Electronics*, 1997, V. 83, No. 2, pp. 177-189.

15 S.M. Menon, A.P. Jayasumana and Y.K. Malaiya “Testable Design for BiCMOS Stuck-Open Fault Detection using Single Patterns” *IEEE Journal of Solid State Circuits*, Aug. 1995, pp. 855-863.

16 S.M. Menon, A.P. Jayasumana and Y.K. Malaiya, “Manifestation of Faults in Single and Double BJT BiCMOS Logic Gates,” *Proc. IEE, Pt. E, Computers and Digital Techniques*, Vol. 142, No. 2, pp. 135-144, March 1995.

17 Y.K. Malaiya, A.P. Jayasumana, Q. Tong and S. Menon, “Resolution Enhancement in IDDQ testing for Large ICs” *International Journal of VLSI Design*, Vol. 1, No. 4, pp. 277-284.

18 N. Karunanithi, D. Whitley and Y.K. Malaiya, “Prediction of Software Reliability using a Connectionist Approach,” IEEE Trans. Software Engineering, Sept. 1992, pp. 563-574.

19 Y.K. Malaiya, “Golahivai and Golladeshadhipa” *Arhat-Vachan*, 1994 (in Hindi).

20 W.K. Al-Assadi, D. Lu, A.P. Jayasumana, Y.K. Malaiya and C.Q. Tong, “Data Feed-through Faults in circuits using Unclocked Storage Elements,” *Electronic Letters*, Vol. 30, No. 10, May 12, 1994, pp. 764-765.

21 Y.K. Malaiya, A. von Mayrhauser and P. Srimani, “An Examination of Fault Exposure Ratio,” *IEEE Trans. Software Engineering*, Nov. 1993, pp. 1087-1094.

22 S.M. Menon, A.P. Jayasumana, Y.K. Malaiya and D.R. Clinkinbeard, “Modeling and Analysis of Bridging Faults in Emitter-Coupled Logic (ECL) Circuits,” *IEE Proceedings, Computer and Digital Techniques*, Vol. 140, No. 4, July 1993, pp. 220-226.

23 W. Alassadi, Y.K. Malaiya and A.P. Jayasumana, "Faulty Behavior of Storage Elements and its Effects on Sequential Circuits" *IEEE Trans. VLSI Systems*, Dec. 1993 pp. 446-452.
24 Y.K. Malaiya, "The Sravakas of Madanasagarpura in the Chandel Period" *Anekant*a, July-Sept. 1993 (in Hindi).
25 Y.K. Malaiya, N. Karunanithi and P. Verma, "Predictability of Software Reliability Models," *IEEE Trans. Reliability*, Dec. 1992, pp. 539-546.
26 N. Karunanithi, D. Whitley and Y.K. Malaiya, "Applying Neural Networks to Software Reliability Prediction," *IEEE Software*, July 1992, pp. 53-59.
27 Y. Min, Y.K. Malaiya and B. Jin, "Analysis of Detection Capability of Parallel Signature Analyzers," *IEEE Trans. Computers*, Vol. 40, No. 9, Sept. 1991, pp. 1075-1081.
28 A.P. Jayasumana and Y.K. Malaiya and R. Rajsuman, "Design of CMOS Circuits for Stuck-Open Fault Testability," *IEEE Journal of Solid State Circuits*, Vol. 26, No.1, January 1991, pp. 58-61.
29 A.P. Jayasumana, W. Al-assadi and Y.K. Malaiya, "On Pass Transistor Logic Design," *International Journal of Electronics*, Vol. 70, No. 4, April 1991, pp. 739-749.
30 S. Feng and Y.K. Malaiya, "Optimization of Test Parallelism with Limited Hardware Overhead," *Microelectronics and Reliability*, Vol. 31, No. 2, 1991, pp. 271-276.
31 Y.K. Malaiya, "The Sravakas of Golladesh and Gollapura," *Anekanta*, Vol. 44, No. 1, Jan. 1991, pp. 4-8 (in Hindi).
32 Y. Min, Y.K. Malaiya and B. Jin, "Aliasing errors in parallel signature analyzers," *Journal of Computer Science and Technology*, V. 5, No. 1, January 1990, pp. 25-40.
33 S.M. Menon, A.P. Jayasumana and Y.K. Malaiya, "Fault Modeling for ECL Devices," *Electronic Letters*, Vol. 26, N0. 15, July 19, 1990, pp. 1105-1108
34 R. Rajsuman, Y.K.Malaiya and A.P. Jayasumana, "Reprogrammable FPLA with Universal Test Set," *Proc. IEE*, Vol. 137, Pt. E, No. 6, Nov. 1990, pp 437-441.
35 R. Rajsuman, Y.K. Malaiya and A.P. Jayasumana, "Limitations of Switch Level Analysis for Bridging Faults," *IEEE Trans. CAD.*, Vol. 8, No. 7, July 1989, pp. 807-811.
36 R. Rajsuman, A.P. Jayasumana and Y.K. Malaiya, "CMOS Stuck-open Fault Detection in Presence of Glitches and Timing Skews," *IEEE Journal of Solid State Circuits*, Vol. 24, No. 4, August 1989, pp. 1055-1061.
37 R. Rajsuman, Y.K. Malaiya and A.P. Jayasumana, "CMOS Stuck-open Fault Testability," *IEEE Journal of Solid State Circuits*, Vol. 24, No. 1, pp. 193-194, Feb. 1989.
38 Y. Min, Y.K. Malaiya and B. Gupta, "On the Computational Complexity of Test Generation for ETG PLAs," *IEE Proceedings* Vol. 136, Pt. E, No. 2, March 1989, pp. 107-111.
39 R. Rajsuman, A.P. Jayasumana and Y.K. Malaiya, "On Testing of Complex Gates," *Electronic Letters*, Vol. 23, No. 16, July 30, 1987, pp. 813-814.
40 Y.K. Malaiya, "Analyzing Data for CMOS Leakage Faults," *Microelectronics and Reliability*, Vol. 25, No. 5,1985, pp. 943-948.
41 Y.K. Malaiya and R. Narayanaswamy, "Modeling and Testing for Timing Faults in Synchronous Sequential Circuits," *IEEE Design and Test of Computers*, Vol. 1, No. 4, November 1984, pp. 62-74.
42 Y.K. Malaiya and S.Y.H. Su, "Analysis of an Important Class of Non- Markov Systems," *IEEE Trans. Reliability*, Vol. R-31, No. 1, April 1982, pp. 64-68.
43 Y.K. Malaiya, "Linearly Correlated Intermittent Failures," *IEEE Trans. Reliability*, Vol. 31, No. 2, June 1982, pp. 211-215.
44 Y.K. Malaiya and S.Y.H. Su, "Reliability Evaluation for Hardware Redundancy Fault-Tolerant Systems with Intermittent Faults," *IEEE Trans. Computers*, Vol. C-30, No. 8, August 1981, pp. 600-604.
45 C.C. Liaw, S.Y.H. Su and Y.K. Malaiya, "Test-Experiments for Detection and Location of Intermittent Faults in Sequential Circuits," *IEEE Trans. Computers*, Vol. C-30, No. 12, December 1981, pp. 989-995.
46 S.Y.H. Su, I. Koren, Y.K. Malaiya, "A Continuous Parameter Markov Model and Detection Procedures for Intermittent Faults," *IEEE Trans. Computers*, Vol. C-27, No. 6, June 1978, pp. 567-570.
47 Y.K. Malaiya, "An Examination of the Sixteenth Chapter of Vardhamana Purana," *Anekanta*, Vol. 27, No. 2, August 1974, pp. 58-64 (in Hindi).
48 Y.K. Malaiya, "On the Golapurvas ," *Anekanta*, Vol. 25, No. 2, May 1972, pp. 68-72 (in Hindi).
49 Y.K. Malaiya, "Research Notes," *Anekanta*, Vol. 24, No. 5, November 1971, pp. 213-214 (in Hindi).

5 Conferences

1. O.H. Alhazmi and Y.K. Malaiya, “Are the Classical Disaster Recovery Tiers Still Applicable Today?”, Proc. Int. Symp. Software Reliability Eng. Workshops, (ISSREW), pp. 114-115, Nov. 2014.
2. A. Younis, Y.K. Malaiya, "Using Software Structure to Predict Vulnerability Exploitation Potential," Int. Conf. on Software Security and Reliability-Companion (SERE-C), pp.13-18, June 30-July 2 2014.
3. Y. K. Malaiya, “Interactions among Dharmic Traditions: with emphasis on Jainism, Buddhism and Hinduism,” Uberoi Foundation Experts Meeting, Naropa University, Boulder, Sept 13, 2014.
4. A. A. Younis, Y. K. Malaiya, and I. Ray, "Using Attack Surface Entry Points and Reachability Analysis to Assess the Risk of Software Vulnerability Exploitability", Proc. 2014 IEEE 15th International Symposium on High-Assurance Systems Engineering (HASE 2014), Miami, January, 2014, pp. 1-8.
5. A. M. Algarni, and Y. K. Malaiya, "Most Successful Vulnerability Discoverers: Motivation and Methods", Int. Conference on Security and Management (SAM 2013), Las Vegas, July 2013, pp. 3-9.
6. O. H. Alhazmi and Y.K. Malaiya, “Evaluating Disaster Recovery Plans Using the Cloud”, Proc. Reliability and Maintainability Symposium (RAMS 2013), Orlando, January 2013, pp. 37-42.
7. A. A. Younis and Y. K. Malaiya,"Relationship between Attack Surface and Vulnerability Density: A Case Study on Apache HTTP Server", ICOMP'12, 2012 Int. Conference on Internet Computing, July 2012, pp. 197-203.
8. O. H. Alhazmi and Y.K. Malaiya, “Assessing Disaster Recovery Alternatives: On-site, Colocation or Cloud”, Proc. 23rd IEEE Int. Symposium on Software Reliability Engineering Workshop, 2012, pp. 19-20.
9. H. Joh and Y. K. Malaiya, "Defining and Assessing Quantitative Security Risk Measures Using Vulnerability Lifecycle and CVSS Metrics," Proc. Int. Conference on Security and Management (SAM11), 2011, pp.10-16.
10. A. A. Younis, H. Joh, and Y. K. Malaiya, "Modeling Learningless Vulnerability Discovery using a Folded Distribution," Proc. Int. Conference on Security and Management (SAM11), 2011.
11. HyunChul Joh and Yashwant K. Malaiya, "A Framework for Software Security Risk Evaluation using the Vulnerability Lifecycle and CVSS Metrics" International Workshop on Risk and Trust in Extended Enterprises (RTEE’2010), November 2010, pp. 430-434.
12. X. He, Y. K. Malaiya, A. P. Jayasumana, K. P. Parker and S. Hird, "Principal Component Analysis-Based Compensation for Measurement Errors Due to Mechanical Misalignments in PCB Testing" Proc. 41st International Test Conference (ITC'10), Austin, Texas, November 2010, pp.16.1.1-10.
13. H. Joh and Y. K. Malaiya, "Modeling Skewness in Data with S-shaped Vulnerability Discovery Models" Proc. Int. Symp. Software Reliability Eng. (ISSRE), Fast Abstracts, November 2010, pp. 406-407.
14. H. Joh, S. Chaichana and Y. K. Malaiya, "Short-term Periodicity in Security Vulnerability Activity" Proc. Int. Symp. Software Reliability Eng. (ISSRE), Fast Abstracts, November 2010, pp. 408-409.
15. A. P. Jayasumana, Y. K. Malaiya, X. He, K. P. Parker and S. Hird, "Compensation for measurment errors due to mechanical misalighment in PCB testing," IEEE 9th International Board Test Workshop (BTW'10), Fort Collins, CO, Sept. 14 - 16, 2010.
16. X. He, Y. K. Malaiya, A. P. Jayasumana, K. P. Parker and S. Hird, "An Outlier Detection Based Approach for PCB Testing,", Proc. IEEE Int. Test Conference, Nov. 2009, pp. 1-10.
17. X. He, Y. Malaiya, A. P. Jayasumana, K. P. Parker and S. Hird, "Outlier Detection in Capacitive Open Test Data Using Principal Component Analysis," Presented at the IEEE 8th International Board Test Workshop (BTW'09), Fort Collins, CO, Sept. 2009.
18. H. Joh and Y. K. Malaiya, "Seasonal Variation in the Vulnerability Discovery Process, " Proc. 2nd IEEE Int. Conf. Software Testing, Verification, and Validation, April 2009, pp. 191-200.
19. H. Joh and Y. K. Malaiya, "Seasonality in Vulnerability Discovery in Major Operating Systems and Web Applications," Fast Abstract, Proc. Int. Symp. Software Reliability Eng., Nov. 2008, pp. 297-298.
20. H. Joh, J. Kim and Y. K. Malaiya, "Vulnerability Discovery Modeling using Weibull Distribution," Fast Abstract, Proc. Int. Symp. Software Reliability Eng., Nov. 2008, pp. 299-300.
21. J. Kim, Y. K. Malaiya and I. Ray, "Vulnerability Discovery in Multi-Version Software Systems," Proc. 10th IEEE Int. Symp. on High Assurance System Engineering (HASE), Dallas, Nov. 2007, pp. 141-148.
22. A. Sanyal, A. Sokolov, Y. Malaiya and D. Whitley, " A Co-evolutionary Algorithm for Dynamic Power Minimization During Scan Testing," 16th IEEE North Atlantic Test Workshop, May 2007, pp. 13-18.
23. Jinyoo Kim, Omar Alhazmi and Yashwant Malaiya, "Vulnerabilities in Browsers: Trends in Internet Explorer and Firefox", Supp. Proc. ISSRE Fast Abstracts, Nov. 2006, pp 1-2.
24. S-W. Woo, O.H. Alhazmi and Y.K. Malaiya, "An Analysis of the Vulnerability Discovery Process in Web Browsers", Proc. 10th IASTED Int. Conf. on Software Engineering and Applications, Nov. 2006.

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26. O.H. Alhazmi, S-W. Woo, and Y.K. Malaiya, "Security Vulnerability Categories in Major Software Systems", Proc. IASTED Int. Conference on Communication, Network and Information Security, Oct. 2006. pp.138-143.
27. S-W. Woo, O.H. Alhazmi and Y.K. Malaiya, "Assessing Vulnerabilities in Apache and IIS HTTP Servers", Proc. IEEE Int. Symp. on Dependable, Autonomic and Secure Computing (DASC'06), Sept.-Oct. 2006, pp. 103-110.
28. A. Sharma, A. P. Jayasumana and Y.K. Malaiya, "X-IDDQ: A Novel Defect Detection Technique using IDDQ Data," Proc. IEEE VLSI Test Symposium, April-May 2006, pp. 180-185.
29. O. H. Alhazmi and Y. K. Malaiya, "Prediction Capabilities of Vulnerability Discovery Models," Proc. Reliability and Maintainability Symposium, Jan 2006, pp.86-91.
30. O. H. Alhazmi and Y. K. Malaiya, "Modeling the Vulnerability Discovery Process," Proc. Int. Symp. Software Reliability Eng, Nov. 2005, pp. 129-138.
31. Y. K. Malaiya, C. Braganza and C. Sutaria, "Early Applicability of the Coverage/Defect Model," Supp. Proc. Int. Symp. Software Reliability Eng, Nov. 2005, pp. 4.27-4.28.
32. A. Sokolov, A. Sanyal, D. Whitley, Y.K. Malaiya, "Dynamic Power Minimization During Combinational Circuit Testing as a Traveling Salesman Problem," Proc. 2005 IEEE Congress on Evolutionary Computation, Sept. 2005, pp. 1088-1095.
33. O. H. Alhazmi, Y. K. Malaiya and I. Ray, "Security Vulnerabilities in Software Systems: A Quantitative Perspective," Proc. IFIP WG 11.3 Working Conference on Data and Applications Security, August 2005, pp. 281-294.
34. A. S. Banthia, A. P. Jayasumana and Y. K. Malaiya, "Data Size Reduction for Clustering Based Binning of ICs Using Principal Component Analysis (PCA)", Proc. IEEE Int. Workshop on Defect Based Testing, May 2005., pp. 27-33.
35. O. Alhazmi, Y.K. Malaiya, "Quantitative Vulnerability Assessment of System Software," Proc. IEEE Reliability and Maintainability Symposium, Jan. 2005, pp. 615-620.
36. J. Chen and Y.K. Malaiya, "Augmenting Test Case Geeneration using Statechart," Proc. Int. Conf. Software Eng. Research and Practice, June 2004, pp. 608-614.
37. D. Henry and Y.K. Malaiya, "A Visualization System for Sliding Windows Protocol," Proc. ACM/IEEE Frontiers in Education Conference, Nov. 2003, pp. T2C1-T2C6.
38. R.P. Turakhia, A.P. Jayasumana and Y.K. Malaiya, "Clustering based Production Line binning of ICs based on IDDQ,", Proc. Int. Work. *on Defect Based Testing*, April 2003, pp. 65-73.
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Graduate committees (since 2003 only)

I have **advised more than 65** graduate students and have **served on the committees for more than 250** graduate students at Colorado State University. The list below is from 2003 only.

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