

SWAJEETH PILOT. PANCHANGAM

11RE71P02, M.S (By Research), Reliability Engineering Centre

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CAREER OBJECTIVE: Aiming for a challenging, innovative and rewarding career, where i can share and enrich my knowledge and contribute towards the goals of organization.

ACADEMIC DETAILS

Year of passing	Degree/Certificate	Institute/School, city	CGPA / %
2013 (Expected)	M. S (By Research) in Reliability Engineering	IIT Kharagpur	7.5
2009	B.Tech (Electronics and Communication Engineering)	DVR & Dr HS Mic college of technology, Vijayawada	70.74%
2005	Intermediate (Maths, Physics, Chemistry)	Gowtham Junior College, Vijayawada, A. P	92.7%
2003	SSC	Sri Bharathiya Vidya Nikethan, Vijayawada, A. P	83%

COURSES TAKEN IN M. S (By Research)

1. Reliability Analysis and Prediction
2. Reliability Estimation and Life testing
3. Probabilistic Risk Assessment
4. Reliability Design
5. English for Technical Writing.

BROAD AREA OF RESEARCH

- Reliability modeling and performance analysis of sensor systems

LIST OF PUBLICATIONS

- Reliability modeling of sensors network system for critical applications by **Swajeeth Pilot Panchangam and V. N. A. Naikan** *International Journal of Conceptions on Electronics Engineering*, IJCEE- 2012 (Accepted).
- Optimal allocations of sensors in a network using improved AGREE method by **Swajeeth Pilot Panchangam and V. N. A. Naikan** *RTA Journal* (Communicated).
- Application of reliability growth models to sensor systems by **Swajeeth Pilot Panchangam and V. N. A. Naikan** *International Journal of Quality and Reliability Engineering*, IJQRE- 2012 (Communicated).
- Failure analysis for reliability improvement of electronic sensors by **Swajeeth Pilot Panchangam and V. N. A. Naikan** *International Journal of Recent Technology and Engineering*, vol. 1, no. 3, pp. 83-87, 2012.
- Reliability prediction for low power adiabatic logic families by **Suresh kumar pittala, Swajeeth Pilot Panchangam, and Dr. A. Jhansi rani** *International Journal of Recent Technology and Engineering*, vol. 1, no. 3, pp. 116-121, 2012.
- Reliability modeling of sensors network system for critical applications by **Swajeeth Pilot Panchangam and V. N. A. Naikan** *International Conference on Advances in Electronics Engineering (ICETM Sep - 2012)*, pp.7-10, Tirupathi, India.
- Failure mode identification and analysis of electronic sensors by **Swajeeth Pilot Panchangam and V. N. A. Naikan** *International Conference on Advances in Electronics and Bio medical Engineering (ICAEBME Aug - 2012)*, pp.270-274, Pondicherry, India.
- Reliability Analysis of Hall Effect Current Sensor System by **Swajeeth Pilot Panchangam and V. N. A. Naikan** *International Conference on Optimization Modeling and Applications (OPTIMA, Nov - 2012)*, New Delhi, India (Communicated).

JOB EXPERIENCE

- **Research Scholar** in Reliability Engineering Centre at **IIT Kharagpur**. Working on project titled: - “Reliability Analysis, Modeling and Prediction of 21NA (Absolute) Pressure Sensors,” sponsored by **ISRO, India**.
- Worked as a **Lecturer** in the Dept of ECE from Jun-2010 to Jun-2011 at SRTIST, Nalgonda, Andhra Pradesh, India.
- Worked as an **RF Network Engineer** from Jun-2009 to Mar-2010 at NR Switches and Radio Services, Gurgaon, India.

TECHNICAL SKILLS

Programming languages Known: C.

Environments familiar with: Relex, Matlab, Weibull++, Minitab, Multi Sim, MIL-STD-217+, IEC-61508, ALTA, Lamda Predict, Block Sim, Reliability Growth Analysis.

RESEARCH WORK DONE

The following research works are being carried out as part of my **M.S thesis:**

- **Reliability Analysis, Prediction and Modeling of 21 (NA) Pressure Sensors (Sponsored by ISRO)**

This work is about finding out the reliability number, developing methods to improve the reliability of sensors used in rocketry systems. We developed various sensors multimodal management techniques which consumes low power.

- **Reliability Modeling of Sensors Network System for Critical Applications**

We developed a new approach to evaluate the static reliability of sensors which are used in critical applications like: Nuclear power plants, propulsion system of satellites etc. A new algorithm is proposed to obtain the sensor network system configuration to achieve target reliability at minimum cost.

- **Failure Mode Identification and Analysis of Electronic Sensors**

In this work we documented the common failure modes of electronic sensors. The effects of failure modes are studied in detail and these are classified based on their criticality and probability of occurrence. Methods for taking corrective actions for eliminating the occurrence of various failure modes are also proposed. It is understood that the designer has an important role in elimination of the failure modes at the design stage itself.

- **Application of Reliability Growth Models to Sensor Systems**

In this work we considered the three reliability growth models namely Duane, AMSAA, and ERG II models. We compared the three models for both time and failure terminated tests. Comparisons are carried out by simulating and conducting the statistical hypothesis T-test on twenty sets of failure data. An inference made from statistical hypothesis T-test is that AMSAA model is better choice for time terminated reliability growth test. Duane model is better choice for failure terminated reliability growth test. This is based on comparison with ERG II model which is expected to give best results.

Project Advisor & Principle Investigator: Prof. V. N. A. Naikan, Reliability Engineering Centre, IIT Kharagpur.

- The following work was done as a part of my **B.Tech project:**

Low Power Adiabatic Logic Design (VLSI)

Power dissipation is an important aspect of digital computing systems because of the increasing demand for portable electrical digital systems. The adiabatic switching is a new approach to design a low-power digital system. Unlike conventional CMOS logic circuits, adiabatic circuits recover and reuse circuit energy that would otherwise be dissipated as heat and thus improve the portability of system.

Project advisor: Dr. P. Suresh Kumar (ECE Dept., MIC)

REFERENCES

- Dr. V. N. A. Naikan, Professor, Reliability Engineering Centre, IIT Kharagpur, West Bengal, India.