Modeling for Reliability Analysis: Markov Modeling for Reliability, Maintainability, Safety, and Supportability Analyses of Complex Systems
Jan Pukite, Paul Pukite

DESCRIPTION

"Markov modeling has long been accepted as a fundamental and powerful technique for the fault tolerance analysis of mission-critical applications. However, the elaborate computations required have often made Markov modeling too time-consuming to be of practical use on these complex systems. With this hands-on tool, designers can use the Markov modeling technique to analyze safety, reliability, maintainability, and cost-effectiveness factors in the full range of complex systems in use today.

Featuring ground-breaking simulation software and a comprehensive reference manual, MARKOV MODELING FOR RELIABILITY ANALYSIS helps system designers surmount the mathematical computations that have previously prevented effective reliability analysis. The text and software compose a valuable self-study tool that is complete with detailed explanations, examples, and a library of Markov models that can be used for experiments and as derivations for new simulation models. The book details how these analyses are conducted, while providing hands-on instruction on how to develop reliability models for the full range of system configurations.

Computer-Aided Rate Modeling and Simulation (CARMS) software is an integrated modeling tool that includes a diagram-based environment for model setup, a spreadsheet like interface for data entry, an expert system link for automatic model construction, and an interactive graphic interface for displaying simulation results."
ABOUT THE AUTHOR

About the Authors...

Jan Pukite has been actively involved in military and commercial system design for over 30 years. His experience includes process and flight control system analysis and design, fault-tolerant system design, analysis and simulation of complex electronic systems, software development, and microcomputer applications. He served as the principal investigator on the following SBIR contracts: Logistics Software Implementation (Office of Naval Research); Fail-Safe, Fault-Tolerant Electronics, Phases I and II (Air Force Avionics Laboratory), and Intelligent Built-In Test Module (Naval Air Systems Command). In 1984, he founded DAINA to engage in advanced technology research and development.

Paul Pukite has co-authored 30 refereed papers in various basic and applied research topics dealing with advanced electronics system design and software engineering. His projects have included developing new yield analysis techniques for semiconductor manufacturing, using digital signal processors (DSP) to perform a wide range of computationally intensive statistical analysis tasks that have normally been relegated to supercomputers, and building the Ada expert system and support software that formed the basis of the Redundancy and Reconfiguration Manager (RRM) developed for the Air Force Pave Pillar Integrated Test Bed at Wright-Patterson Air Force Base.

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