CHAPTER 32

MATHEMATICAL SCIENCES
OPERATIONAL RESEARCH

Doctoral Theses

424.   BASIRZADEH (Mashaallh)
        **Modelling and Allocation Problems in Software Reliability
        and Marketing.**
        Supervisors :   Prof P. K. Kapur and Dr. O. Singh
        Th 16743

Abstract

Discussed few new reliability growth models; these models have
been established by working out parameter estimation for
different types of failure data sets. Power functioms are not
limited to the software reliability, but they can also used for the
mathematical modelling in other areas like marketing etc.
Deals with the concept of Modelling in Software Reliability
Growth and Marketing. Attempts to incorporate the concept of
artificial neural-network, stochastic differential equation,
marketing and Genetic Algorithm and developing models under
distributed environment. The accuracy and predictability of work
included here has been validates and verified on different real
software failure/removal data sets.

Contents

1. Introduction. 2. Artificial natural network based software
reliability growth models. 3. Testing effort and stochastic differential
equation based software reliability growth models (SRGM). 4.
Instructions executed dependent software reliability growth
modelling for open source software by considering change-point.
5. Determing adoption pattern with pricing using two dimensional
innovation diffusion model. 6. Genetic algorithm based
optimization problems based in software reliability and marketing.
7. Conclusion and direction for future research. References.

425. DEEPAK KUMAR
Modelling and Optimization Problems in Software Reliability.
Supervisor : Dr. P. C. Jha
Th 16744

Abstract

Focuses on software reliability growth models and optimization problems in software reliability. The performances of the proposed models are validated on real life data sets existing in software reliability literature. Various optimization problems viz resource allocation problems and optimal component selection for COTS based software systems are studied along with their solution methodology.

Contents

1. Introduction. 2. Software reliability growth models with teo types of imperfect debugging. 3. Modelling of software reliability growth for fault detection/correction processes. 4. Resource/ testing effort allocation problem in molecular software system. 5. Optimization problems for COTS based modular software system. Refernces.

426. VERMA (Mona)
Strategic Inventory Analysis and Optimization in Supply Chain.
Supervisors : Dr. Chandra K. Jaggi and Dr. K. K. Aggarwal
Th 16742

Abstract

Provides optimum strategies to deal with inventory models having various realistic situations such as trade credit (full/partial), deterioration, bullwhip effect, credit linked demand, in a supply chain context. Presents various inventory models in a supply chain environment e.g. causes of Bullwhip effect such as rationing, capacity allocation, multi-item deteriorating demand, credit linked demand, trade credit (full or partial).

Contents

1. An overview. 2. Managing inventories in supply chain. 3. Retailers's inventory decisions with varying credit strategies. 4. EOQ models under two echelon partial trade credit financing. 5. Replenishment strategies when demand is credit sensitive. 6. Conclusion and bibliography.

M.Phil Dissertations

427. AGRAWAL (Shweta)
Study of Integrated Single - Vendor Single - Buyer Inventory Models in Two Stage Supply Chain.
Supervisor : Dr. K. K. Aggarwal

428. AGGARWAL (Usha)
On Transportation Problems : A Fuzzy Approach.
Supervisor : Dr. Pankaj Gupta

429. ANAND (Adarsh)
Study of Diffusion in Franchising and Multi Generation Software.
Supervisor : Prof. P. K. Kapur

430. ANEJA (Sonal)
Study of Optimization Methods in Finance.
Supervisor : Dr. K. K. Aggarwal

431. BHAYANA (Nidhi)
Study of Data Envelopment Analysis (Dea) and its Applications to Market Services.
Supervisor : Dr. P. C. Jha

432. CHARANJEET SINGH
Study of Inventory Systems with Stock Dependent Demand.
Supervisor : Dr. K. K. Aggarwal

433. CHITKARA (Pooja)
Six Sigma and its Applications in Selected Areas.
Supervisor : Dr. P. C. Jha

434. KAPOOR (Kanica)
Applications of Genetic Algorithms in Software Reliability.
Supervisors : Prof. P. K. Kapur and Dr. Anu G. Aggarwal

435. MANIK (Prerna)
Application of Diffusion in Prescription Drugs and Software.
Supervisor : Prof. P. K. Kapur

436. SANTOSH KUMAR
Some Aspects of Linear Fractional Programming with Applications.
Supervisor : Dr. Pankaj Gupta

437.   SHARMA (Deepmala)
        Mean - Variance Tradeoffs in Discrete Time Markov Decision Processes : A Review.
        Supervisor : Dr. (Mrs.) Preeti Wanti Srivastava