

# 2021 Index

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This index covers all technical items—papers, correspondence, reviews, etc.—that appeared in this periodical during 2021, and items from previous years that were commented upon or corrected in 2021. Departments and other items may also be covered if they have been judged to have archival value.

The Author Index contains the primary entry for each item, listed under the first author's name. The primary entry includes the coauthors' names, the title of the paper or other item, and its location, specified by the publication abbreviation, year, month, and inclusive pagination. The Subject Index contains entries describing the item under all appropriate subject headings, plus the first author's name, the publication abbreviation, month, and year, and inclusive pages. Note that the item title is found only under the primary entry in the Author Index.

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- SATMCS: An Efficient SAT-Based Algorithm and Its Improvements for Computing Minimal Cut Sets. *Luo, W.*, +, *TR June 2021 575-589*

- A Combinatorial Modeling Method for Mission Reliability of Phased-Mission System With Phase Backups. *Yu, H.*, +, *TR June 2021 590-601*

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- Multiooutput Gaussian Process Modulated Poisson Processes for Event Prediction. *Jahani, S.*, +, *TR Dec. 2021 1569-1580*

**Boolean functions**

- SATMCS: An Efficient SAT-Based Algorithm and Its Improvements for Computing Minimal Cut Sets. *Luo, W.*, +, *TR June 2021 575-589*

**C****Channel capacity**

- Modeling and Optimizing the Cascading Robustness of Multisink Wireless Sensor Networks. *Fu, X.*, +, *TR March 2021 121-133*

**Chaotic communication**

- The Reliability of IoT Networks With Characteristics of Abnormal Induced Signals. *Kang, W.*, +, *TR June 2021 808-818*

**Classification**

- A Comparative Study of Class Rebalancing Methods for Security Bug Report Classification. *Zheng, W.*, +, *TR Dec. 2021 1658-1670*

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**Codes**

- A CEGAR-Based Static–Dynamic Approach to Verifying Full Regular Properties of C Programs. *Yang, K.*, +, *TR Dec. 2021 1455-1467*

**Cognition**

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**Combinatorial mathematics**

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- An Efficient Algorithm for Finding Modules in Fault Trees. *Chen, M.*, +, *TR Sept. 2021 862-874*
- Beating Random Test Case Prioritization. *Zhou, Z.Q.*, +, *TR June 2021 654-675*

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#### Computer network reliability

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#### Computer science

An Analysis on the Reliability of the Alternating Group Graph. *Lin, L.*, +, *TR Dec. 2021 1542-1555*

#### Computer vision

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#### Contracts

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#### Control engineering computing

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#### Convergence

DeepEutaxy: Diversity in Weight Search Direction for Fixing Deep Learning Model Training Through Batch Prioritization. *Zhang, H.*, +, *TR Sept. 2021 1040-1052*

#### Convolution

An Enhanced Multifeature Fusion Method for Rotating Component Fault Diagnosis in Different Working Conditions. *Miao, J.*, +, *TR Dec. 2021 1611-1620*

#### Convolutional neural networks

Adversarial Attacks in Modulation Recognition With Convolutional Neural Networks. *Lin, Y.*, +, *TR March 2021 389-401*

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Data Evaluation and Enhancement for Quality Improvement of Machine Learning. *Chen, H.*, +, *TR June 2021 831-847*

#### Copy protection

Fuzzy-in-the-Loop-Driven Low-Cost and Secure Biometric User Access to Server. *Irshad, A.*, +, *TR Sept. 2021 1014-1025*

#### Correlation methods

Diagnosis of Sensor Faults in Hypersonic Vehicles Using Wavelet Packet Translation Based Support Vector Regressive Classifier. *Ai, S.*, +, *TR Sept. 2021 901-915*

#### Costs

Multiscenario Analyses Between Front and Back End Investment in Software Reliability: An Evolutionary Game Perspective. *Zhao, C.*, +, *TR Dec. 2021 1381-1396*

State-Based Opportunistic Maintenance With Multifunctional Maintenance Windows. *Zhang, Z.*, +, *TR Dec. 2021 1481-1494*

#### Crowdsourcing

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A Unified Model for System Reliability Evaluation Under Dynamic Operating Conditions. *Xu, A.*, +, *TR March 2021 65-72*

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Data Evaluation and Enhancement for Quality Improvement of Machine Learning. *Chen, H.*, +, *TR June 2021 831-847*

#### Data fusion

A Deep Learning Based Data Fusion Method for Degradation Modeling and Prognostics. *Wang, F.*, +, *TR June 2021 775-789*

#### Data integration

Functional Principal Component Analysis for Extrapolating Multistream Longitudinal Data. *Chung, S.*, +, *TR Dec. 2021 1321-1331*

#### Data mining

Defect Prediction With Semantics and Context Features of Codes Based on Graph Representation Learning. *Xu, J.*, +, *TR June 2021 613-625*

Design for Reliability Through Text Mining and Optimal Product Verification and Validation Planning. *Huang, Q.*, +, *TR March 2021 231-247*

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RTPDroid: Detecting Implicitly Malicious Behaviors Under Runtime Permission Model. *Zhang, J.*, +, *TR Sept. 2021 1295-1308*

Understanding the Evolution of Android App Vulnerabilities. *Gao, J.*, +, *TR March 2021 212-230*



**Data structures**

Cross-Project Defect Prediction via Landmark Selection-Based Kernelized Discriminant Subspace Alignment. *Li, Z., +, TR Sept. 2021 996-1013*

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Train Route Information Visual Distance Extension and Analysis of Driver Cognitive Reliability. *Wang, J., +, TR June 2021 602-612*

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**Decision making**

A Robust Interactive Desirability Function Approach for Multiple Response Optimization Considering Model Uncertainty. *He, Y., +, TR March 2021 175-187*

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Optimal Setting of Test Conditions and Allocation of Test Units for Accelerated Degradation Tests With Two Stress Variables. *Fang, G., +, TR Sept. 2021 1096-1111*

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Design for Reliability Through Text Mining and Optimal Product Verification and Validation Planning. *Huang, Q., +, TR March 2021 231-247*

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**Distributed algorithms**

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**E****Eigenvalues and eigenfunctions**

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Accelerated Life Test Planning for Minimizing Misclassification Risks. *Gao, L., +, TR June 2021 459-471*

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Redundancy Dependence in the Context of Competing Risks and Dynamic Degradation. *Van Acker, T., +, TR June 2021 472-480*

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#### **Fingerprint identification**

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Efficient Automaton Theoretical Vacuity Detection for Formal Properties. *Zhou, S.*, +, *TR Sept. 2021 1071-1083*

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A New Integrated Approach for Risk Evaluation and Classification With Dynamic Expert Weights. *Liu, H.*, +, *TR March 2021 163-174*

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Condition-Based Maintenance Planning for Systems Subject to Dependent Soft and Hard Failures. *Hu, J.*, +, *TR Dec. 2021 1468-1480*

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Data Encryption for Internet of Things Applications Based on Catalan Objects and Two Combinatorial Structures. *Saracevic, M.H.*, +, *TR June 2021 819-830*

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Efficient Approximation of Two-Terminal Networks Reliability Polynomials Using Cubic Splines. *Cristescu, G.*, +, *TR Sept. 2021 1193-1203*

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On Existence of Common *Malicious System Call Codes* in Android Malware Families. *Surendran, R.*, +, *TR March 2021 248-260*

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**J****Java**

FCCA: Hybrid Code Representation for Functional Clone Detection Using Attention Networks. *Hua, W.*, +, *TR March 2021 304-318*

On the Impact of Interlanguage Dependencies in Multilanguage Systems Empirical Case Study on Java Native Interface Applications (JNI). *Grichi, M.*, +, *TR March 2021 428-440*

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State-Based Opportunistic Maintenance With Multifunctional Maintenance Windows. *Zhang, Z.*, +, *TR Dec. 2021 1481-1494*

**Just-in-time**

Simplified Deep Forest Model Based Just-in-Time Defect Prediction for Android Mobile Apps. *Zhao, K.*, +, *TR June 2021 848-859*

**L****Labeling**

Supporting Deep Neural Network Safety Analysis and Retraining Through Heatmap-Based Unsupervised Learning. *Fahmy, H.*, +, *TR Dec. 2021 1641-1657*

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Quantitative Security Evaluation of Intrusion Tolerant Systems With Markovian Arrivals. *Zheng, J.*, +, *TR June 2021 547-562*

**Learning (artificial intelligence)**

SATMCS: An Efficient SAT-Based Algorithm and Its Improvements for Computing Minimal Cut Sets. *Luo, W.*, +, *TR June 2021 575-589*

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**Learning systems**

Duo: Differential Fuzzing for Deep Learning Operators. *Zhang, X.*, +, *TR Dec. 2021 1671-1685*

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Remaining Useful Life Prediction Considering Joint Dependency of Degradation Rate and Variation on Time-Varying Operating Conditions. *Wang, H.*, +, *TR June 2021 761-774*

**Life testing**

Accelerated Life Test Planning for Minimizing Misclassification Risks. *Gao, L.*, +, *TR June 2021 459-471*

Optimal Setting of Test Conditions and Allocation of Test Units for Accelerated Degradation Tests With Two Stress Variables. *Fang, G.*, +, *TR Sept. 2021 1096-1111*

Parameter Estimation Using EM Algorithm For Lifetimes From Step-Stress and Constant-Stress Accelerated Life Tests With Interval Monitoring. *Han, D.*, +, *TR March 2021 49-64*

Two-Stage Maximum Likelihood Estimation Procedure for Parallel Constant-Stress Accelerated Degradation Tests. *Wu, C.*, +, *TR June 2021 446-458*

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**Linear programming**

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**Logistics**

Belief Availability for Repairable Systems Based on Uncertain Alternating Renewal Process. *Yu, W.*, +, *TR Sept. 2021 1242-1254*

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Remaining Useful Life Prediction Based on Normalizing Flow Embedded Sequence-to-Sequence Learning. *Yang, H.*, +, *TR Dec. 2021 1342-1354*

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**Machining**

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Reliability Evaluation of Production System With In-Line Stockers. *Chang, P.*, +, *TR Sept. 2021 986-995*

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**Mathematical analysis**

- Design for Reliability Through Text Mining and Optimal Product Verification and Validation Planning. *Huang, Q.*, +, *TR March 2021 231-247*

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- Divergence-Based Robust Inference Under Proportional Hazards Model for One-Shot Device Life-Test. *Balakrishnan, N.*, +, *TR Dec. 2021 1355-1367*
- Resilience-Based Optimal Recovery Strategy for Cyber-Physical Power Systems Considering Component Multistate Failures. *Wu, G.*, +, *TR Dec. 2021 1510-1524*

**Matrix algebra**

- Bayesian Importance Measures for Network Edges Under Saturated Lagrangian Poisson Failures. *Du, Y.*, +, *TR March 2021 110-120*

**Maximum likelihood estimation**

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- A Deep Learning Based Data Fusion Method for Degradation Modeling and Prognostics. *Wang, F.*, +, *TR June 2021 775-789*

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- Diagnosis of Sensor Faults in Hypersonic Vehicles Using Wavelet Packet Translation Based Support Vector Regressive Classifier. *Ai, S.*, +, *TR Sept. 2021 901-915*

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- Data Evaluation and Enhancement for Quality Improvement of Machine Learning. *Chen, H.*, +, *TR June 2021 831-847*

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- Human Reliability Assessment of Home-Based Rehabilitation. *Wang, D.*, +, *TR Dec. 2021 1310-1320*

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- Guest Editorial: Special Section on IEEE International Conference on Software Quality, Reliability, and Security (QRS) 2020. *Chan, W.K.*, +, *TR June 2021 442*

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- Optimal Age-Replacement in Anticipation of Time-Dependent, Unpunctual Policy Implementation. *Sanoubar, S.*, +, *TR Sept. 2021 1177-1192*
- Searching for *d*-MPs for All Level *d* in Multistate Two-Terminal Networks Without Duplicates. *Bai, G.*, +, *TR March 2021 319-330*

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- Dependability Assessment of the Android OS Through Fault Injection. *Cotroneo, D.*, +, *TR March 2021 346-361*
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- Reliability of Autonomous Internet of Things Systems With Intrusion Detection Attack-Defense Game Design. *Wang, D.*, +, *TR March 2021 188-199*

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- Multiooutput Gaussian Process Modulated Poisson Processes for Event Prediction. *Jahani, S.*, +, *TR Dec. 2021 1569-1580*

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On the Impact of Interlanguage Dependencies in Multilanguage Systems Empirical Case Study on Java Native Interface Applications (JNI). *Grichi, M.*, +, *TR March 2021 428-440*

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**Power engineering computing**

Uncertainty Quantification for Extreme Quantile Estimation With Stochastic Computer Models. *Pan, Q.*, +, *TR March 2021 134-145*

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Resilience-Based Optimal Recovery Strategy for Cyber-Physical Power Systems Considering Component Multistate Failures. *Wu, G.*, +, *TR Dec. 2021 1510-1524*

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A Comparative Study of Class Rebalancing Methods for Security Bug Report Classification. *Zheng, W.*, +, *TR Dec. 2021 1658-1670*

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Optimal Age-Replacement in Anticipation of Time-Dependent, Unpunctual Policy Implementation. *Sanoubar, S.*, +, *TR Sept. 2021 1177-1192*

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Reliability Evaluation of Production System With In-Line Stockers. *Chang, P.*, +, *TR Sept. 2021 986-995*

**Private key cryptography**

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- Remaining Useful Life Prediction Based on Normalizing Flow Embedded Sequence-to-Sequence Learning. *Yang, H.*, +, *TR Dec. 2021 1342-1354*

**Program compilers**

- Effective Prediction of Bug-Fixing Priority via Weighted Graph Convolutional Networks. *Fang, S.*, +, *TR June 2021 563-574*

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