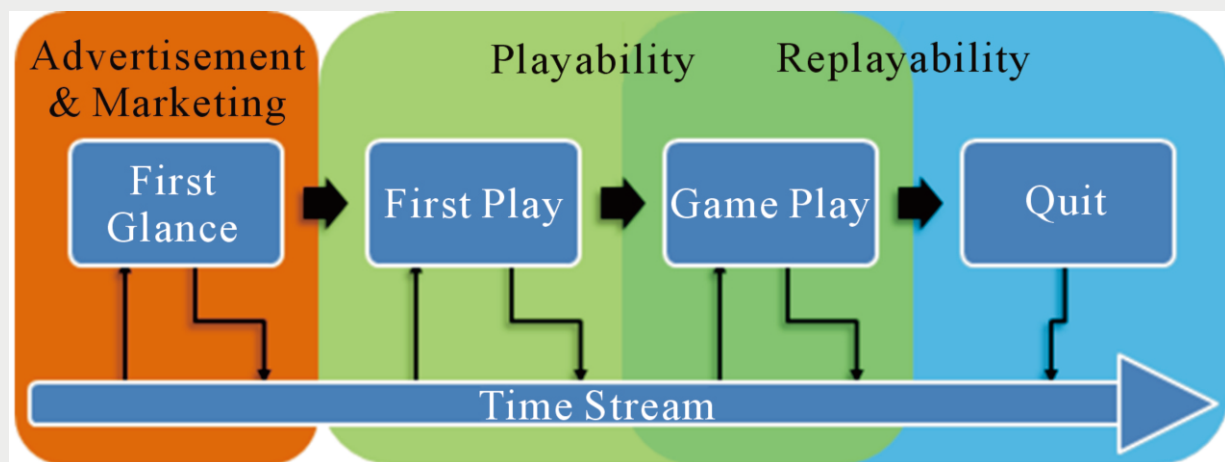


Journal of Software Engineering and Applications



ISSN: 1945-3116



Journal Editorial Board

ISSN 1945-3116 (print) ISSN 1945-3124 (online)

<http://www.scirp.org/journal/jsea>

Editor in Chief

Prof. Yashwant K. Malaiya

Colorado State University, USA

Editorial Board (According to Alphabet)

Dr. Nicoletta Adamo-Villani

Purdue University, USA

Prof. M. G. J. van den Brand

Eindhoven University of Technology, Netherlands

Prof. Kuang-Hua Chang

The University of Oklahoma, USA

Dr. Kim-Kwang Raymond Choo

University of South Australia, Australia

Prof. Steven A. Demurjian

The University of Connecticut, USA

Dr. Zonghua Gu

Zhejiang University, China

Dr. Nabil Hameurlain

University of Pau, France

Dr. Wolfgang Herzner

Austrian Institute of Technology, Austria

Dr. Jacky Wai Keung

The Hong Kong Polytechnic University, Hong Kong (China)

Dr. Ridha Khedri

McMaster University, Canada

Prof. Chang-Hwan Lee

Dongguk University, Korea (South)

Prof. Anthony F. Norcio

University of Maryland, USA

Prof. Janche Sang

Cleveland State University, USA

Prof. Midthe V. Srinath

Mahendra Engineering College, India

Dr. Eliot Winer

The Iowa State University, USA

Prof. Xin Yuan

Florida State University, USA

TABLE OF CONTENTS

Volume 5 Number 7

July 2012

Improving Class Cohesion Measurement: Towards a Novel Approach Using Hierarchical Clustering

L. Sadaoui, M. Badri, L. Badri.....449

Aspects of Replayability and Software Engineering: Towards a Methodology of Developing Games

J. Krall, T. Menzies.....459

A Retrieval Matching Method Based Case Learning for 3D Model

Z. Liu, Q. H. Chen, C. H. Xu.....467

Quality-Oriented Software Product Line Architecture Design

L. Tan, Y. Q. Lin, H. L. Ye.....472

A TSK-Type Recurrent Neuro-Fuzzy Systems for Fault Prognosis

R. Mahdaoui, L. H. Mouss.....477

State Based Static and Dynamic Formal Analysis of UML State Diagrams

F. Alhumaidan.....483

A Classification Algorithm to Improve the Design of Websites

H. K. Singh, B. Singh.....492

Educational Advisor System Implemented by Web-Based Fuzzy Expert Systems

M. H. Goodarzi, V. Rafe.....500

Object Oriented Query Response Time for UML Models

V. Saxena, S. Kumar.....508

Empirical Analysis of Object-Oriented Design Metrics for Predicting Unit Testing Effort of Classes

M. Badri, F. Toure.....513

The figure on the front cover is from the article published in *Journal of Software Engineering and Applications*, 2012, Vol. 5, No. 7, pp. 459-466 by Joseph Krall and Tim Menzies.

Journal of Software Engineering and Applications (JSEA)

Journal Information

SUBSCRIPTIONS

The *Journal of Software Engineering and Applications* (Online at Scientific Research Publishing, www.SciRP.org) is published monthly by Scientific Research Publishing, Inc., USA.

Subscription rates:

Print: \$59 per issue.

To subscribe, please contact Journals Subscriptions Department, E-mail: sub@scirp.org

SERVICES

Advertisements

Advertisement Sales Department, E-mail: service@scirp.org

Reprints (minimum quantity 100 copies)

Reprints Co-ordinator, Scientific Research Publishing, Inc., USA.

E-mail: sub@scirp.org

COPYRIGHT

Copyright©2012 Scientific Research Publishing, Inc.

All Rights Reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as described below, without the permission in writing of the Publisher.

Copying of articles is not permitted except for personal and internal use, to the extent permitted by national copyright law, or under the terms of a license issued by the national Reproduction Rights Organization.

Requests for permission for other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works or for resale, and other enquiries should be addressed to the Publisher.

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assume no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

PRODUCTION INFORMATION

For manuscripts that have been accepted for publication, please contact:

E-mail: jsea@scirp.org



Journal of Software Engineering and Applications (JSEA)

ISSN 1945-3116 (print) ISSN 1945-3124 (online)

www.scirp.org/journal/jsea

JSEA publishes four categories of original technical articles: papers, communications, reviews, and discussions. Papers are well-documented final reports of research projects. Communications are shorter and contain noteworthy items of technical interest or ideas required rapid publication. Reviews are synoptic papers on a subject of general interest, with ample literature references, and written for readers with widely varying background. Discussions on published reports, with author rebuttals, form the fourth category of JSEA publications.

Subject Coverage

All manuscripts must be prepared in English, and are subject to a rigorous and fair peer-review process. Accepted papers will immediately appear online followed by printed hard copy. The journal publishes original papers including but not limited to the following fields:

Automated Software Design and Synthesis
Automated Software Specification
Component-Based Software Engineering
Computer-Supported Cooperative Work
Formal Methods
Knowledge Acquisition
Object-Oriented Technology
Patterns and Frameworks
Process and Workflow Management
Program Understanding Issues
Programming Languages and Software Engineering
Reflection and Metadata Approaches
Reliability and Fault Tolerance

Requirements Engineering
Reverse Engineering
Software Architecture
Software Design Methods
Software Domain Modeling and Meta-Modeling
Software Engineering Decision Support
Software Engineering Education
Software Maintenance and Evolution
Software Process Modeling
Software Quality
Software Reuse
Software Testing
Tutoring, Help, Documentation Systems

We are also interested in short papers (letters) that clearly address a specific problem, and short survey or position papers that sketch the results or problems on a specific topic. Authors of selected short papers would be invited to write a regular paper on the same topic for future issues of the JSEA.

Notes for Prospective Authors

Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. All papers are refereed through a peer review process. For more details about the submissions, please access the website.

Website and E-mail

<http://www.scirp.org/journal/jsea>

E-mail: jsea@scirp.org

TABLE OF CONTENTS

Volume 5 Number 7

July 2012

Improving Class Cohesion Measurement: Towards a Novel Approach Using Hierarchical Clustering L. Sadaoui, M. Badri, L. Badri	449
Aspects of Replayability and Software Engineering: Towards a Methodology of Developing Games J. Krall, T. Menzies	459
A Retrieval Matching Method Based Case Learning for 3D Model Z. Liu, Q. H. Chen, C. H. Xu	467
Quality-Oriented Software Product Line Architecture Design L. Tan, Y. Q. Lin, H. L. Ye	472
A TSK-Type Recurrent Neuro-Fuzzy Systems for Fault Prognosis R. Mahdaoui, L. H. Mouss	477
State Based Static and Dynamic Formal Analysis of UML State Diagrams F. Alhumaidan	483
A Classification Algorithm to Improve the Design of Websites H. K. Singh, B. Singh	492
Educational Advisor System Implemented by Web-Based Fuzzy Expert Systems M. H. Goodarzi, V. Rafe	500
Object Oriented Query Response Time for UML Models V. Saxena, S. Kumar	508
Empirical Analysis of Object-Oriented Design Metrics for Predicting Unit Testing Effort of Classes M. Badri, F. Toure	513