# SERA 2107 International Organizing Committee

**General Chair**  
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Central Michigan University, USA

**Conference Chair**  
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University of Greenwich, UK

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University of Greenwich, UK

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Qin Jing  
Charles University, Czech Republic  
Shandong University, China

**Workshop Chairs**  
Cornelia Boldyreff  
Avgoustinos Filippoupolitis  
University of Greenwich, UK
# Conference Program Overview

**Wednesday, June 7, 2017**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Location</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>7:30 – 9:00</td>
<td>Registration</td>
<td>Outside Queen Ann 180</td>
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<tr>
<td>9:00 – 9:20</td>
<td>Opening Ceremony</td>
<td>Queen Ann 180</td>
<td>-Automatic projection screen</td>
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<tr>
<td></td>
<td>Simon Xu Algoma University, Canada</td>
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<td>-Podium with microphone</td>
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<tr>
<td>10:10 – 10:30</td>
<td>Coffee Break</td>
<td>Outside Queen Ann 180</td>
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<td></td>
<td>Petr Hnetynka Charles University Czech Republic</td>
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<tr>
<td>11:20 – 12:20</td>
<td>Session 1A  Session 1B</td>
<td>Queen Ann 180 Queen Ann 175</td>
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<td>12:20 – 13:20</td>
<td>Lunch</td>
<td>Campus Café</td>
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<td>13:20 – 15:20</td>
<td>Session 2A  Session 2B</td>
<td>Queen Ann 180 Queen Ann 175</td>
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<td>15:20 – 15:30</td>
<td>Coffee Break</td>
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<td>15:30 – 17:30</td>
<td>Session 3A  Session 3B</td>
<td>Queen Ann 180 Queen Ann 175</td>
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<td>-Podium with microphone</td>
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<tr>
<td>18:00 – 19:30</td>
<td>Award Ceremony &amp; Dinner Banquet</td>
<td>Greenwich Town Centre</td>
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### Thursday, June 8, 2017

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<th>Location</th>
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<tr>
<td>8:00 - 12:20</td>
<td>Registration</td>
<td>Outside Queen Ann 180</td>
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<tr>
<td>8:00 - 10:00</td>
<td>Session 4A</td>
<td>Queen Ann 180</td>
<td>-Automatic projection screen</td>
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<td>Session 4B</td>
<td>Queen Ann 175</td>
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<td>-Podium with microphone</td>
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<td>10:00 – 10:20</td>
<td>Coffee break</td>
<td>Outside Queen Ann 180</td>
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<tr>
<td>10:20 – 12:20</td>
<td>Session 5A</td>
<td>Queen Ann 180</td>
<td>-Automatic projection screen</td>
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<td>Session 5B</td>
<td>Queen Ann 175</td>
<td>-Desktop with Laptop computer connection</td>
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<td>-Podium with microphone</td>
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<tr>
<td>12:20 - 13:20</td>
<td>Lunch</td>
<td>(on your own)</td>
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<tr>
<td>13:20 – 15:40</td>
<td>Session 6A</td>
<td>Queen Ann 180</td>
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<td>Session 6B</td>
<td>Queen Ann 175</td>
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<td>-Podium with microphone</td>
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<tr>
<td>16:00 – 18:00</td>
<td>Tour</td>
<td>University Campus</td>
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<td>Greenwich Town</td>
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### Friday, June 9, 2017

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<th>Time</th>
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<tr>
<td>9:00 – 10:00</td>
<td>Technical Forum</td>
<td>Queen Ann Court</td>
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<td>Next SERA Conference</td>
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<td>Closing Remarks</td>
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<tr>
<td>10:00-12:00</td>
<td>ACIS Board of Directors' Meeting</td>
<td>Queen Ann Court</td>
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Empirical Research Methods for Software Engineering

Simon Xu

Department of Computer Science

Algoma University, Canada

simon.xu@algomau.ca

Abstract

Empirical research in software engineering collects and studies the quantitative/qualitative data in order to understand and improve the software product, software development process and software management. The empirical research methods are classified into controlled experiment, case study and survey, and the process of empirical study can be divided into experimental/case study setting, data collection, and data analysis. The protocol analysis, as one of the experimental methods, includes introspective, retrospective and think-aloud approaches.

In this talk, I briefly several empirical research methods in software engineering, and analyze their strengths and weaknesses. A new approach: dialog-based protocol is then introduced. A case study is conducted for evaluation purpose. At the end, the threats and opportunities of empirical research in software engineering are discussed.

Biography

Dr. Simon Xu is the department chair and a Full Professor of Computer Science at Algoma University, Canada. He received his Ph.D. degrees from Wayne State University, USA and University of Liege, Belgium. His research interests include software evolution, program comprehension and cognitive process during software development. Dr. Xu has published more than 80 articles in referred journals and conference proceedings and a few authored/co-authored books. He has also chaired a few international conferences and has been invited to give talks by international conferences and by a lot of universities in China, USA and Canada. He is a member of ACM and IEEE.
Software Abstractions and Architectures for Smart Cyber-Physical Systems

Petr Hnetynka

Associate Professor

Charles University, Prague, Czech Republic

hnetynka@d3s.mff.cuni.cz

Abstract

The significant increase in the ubiquity and connectivity of computing devices has opened new possibilities for addressing social and environmental challenges, e.g., ambient assisted living, smart city infrastructures, emergency coordination, environmental monitoring. Engineering such systems – commonly called smart Cyber-Physical Systems (sCPS) – is typically very challenging because of their inherent dynamicity, open-endedness, autonomicity, and close relation to the real world. The trend observed in modern sCPS is that they are becoming increasingly complex and heavily rely on software to increase their efficiency and resilience. It is natural to expect that in the future of sCPS, the software will be by far the most complex constituent of such systems. This talk aims to present the challenges of engineering software for sCPS and to explain and demonstrate a novel approach based on autonomic component ensembles that provides means (methods and tools) for seamless design and development of sCPS.

Biography

Petr Hnetynka is an associate professor at the Department of Distributed and Dependable Systems, Faculty of Mathematics and Physics, Charles University, Czech Republic. He received his Ph.D. degree in 2005 also from Charles University. In the meantime, he held a postdoctoral researcher position at University College Dublin, Ireland. He specializes in component-based development, model-driven development and smart cyber-physical systems. He co-authored over 50 referred articles and served as program committee chair and/or member of numerous international conferences.
# 2017 IEEE/ACIS 15th International Conference on Software Engineering Research, Management and Application (SERA)

**Wednesday, June 7, 2017**

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<td>9:20 – 10:10</td>
<td>First Keynote Address</td>
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<td>10:10 – 10:30</td>
<td>Coffee Break</td>
<td>Outside Queen Ann 180</td>
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<tr>
<td>10:30 – 11:20</td>
<td>Second Keynote Address</td>
<td>Queen Ann 180</td>
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### 11:20 – 12:20 Session 1A

**Session Chair: Amina Chaabane**

**Efficient composite event detection based on DHT protocol**  
_Amina Chaabane, Salma Bradai, Wassef Louati, Mohamed Jmaiel (Tunisia, ReDCAD laboratory)_

**A New Graph Ranking Model for Image Saliency Detection Problem**  
_Yuanyuan Guan, Bo Jiang, Yun Xiao (China, Anhui University)_

**An Automated Code Smell and Anti-Pattern Detection Approach Analysis of IoT Systems**  
_Sevilay Velioglu, Yunus Emre Selçuk (Turkey, Yıldız Teknik University)_

### 11:20 – 12:20 Session 1B

**Session Chair: Kevin Gary**

**C-PLAD-SM Extending Component Requirements with Use Cases and State Machines**  
_Kevin Gary, M. Brian Blak (USA, Arizona State University)_

**Data Analysis with Multi-objective Optimization Algorithm: a Study in Smart Traffic Signal System**  
_Pengzhe Zhou, Zhiyi Fang, Hongliang Dong, Jiayue Liu, Shuaining Pan (China ilin University)_

**Blind Channel Estimation using Novel Independent Component Analysis with Pulse Shaping for Interference Cancellation**  
_Renuka Bhandari, Sangeeta Jadhav (India, Army Institute of Technology Pune)_

### 12:20 – 13:20 Lunch

**Campus Café**

### 13:20 – 15:20 Session 2A

**Session Chair: Rongfang Bie**

**The Analysis and Prediction of Customer Review Rating Using Opinion Mining**  
_Wararat Songpan (Thailand, Khon Kaen University)_

**Automatic Facial Expression Recognition Based on a Deep Convolutional-Neural-Network Structure**  
_Ke Shan, Junqi Guo, Wenwan You, Di Lu, Rongfang Bie (China, Beijing Normal University)
CloudSim4DWf: A CloudSim-Extension for Simulating Dynamic Workflows in a Cloud environment
Fairouz Fakhfakh, Hatem Hadj Kacem, Ahmed Hadj Kacem (Tunisia, ReDCAD laboratory)

Enabling GSD Task Allocation via Cloud-based Software Processes
Sami Alajrami, Barbara Gallina, Alexander Romanovsky (UK, Newcastle University)

A Server Selection Strategy about Cloud Workflow Based on QoS Constraint
Futian Wang, Ke Fang, Jin Tang, Cheng Zhang (China, Anhui University)

Manifold Ranking Weighted Local Maximal Occurrence Descriptor for Person Re-identification
Foqin Wang, Xuehan Zhang, Jixin Ma, Jin Tang, Aihua Zheng (China, Anhui University)

13:20-15:20  Session 2B  Queen Ann 175
Session Chair: Yucong Duan

A Reliability Evaluation Model of Distributed Autonomous Robotic System Architectures
Xin He, Changbin Xue, Qing Zhou, Kexin Lin (China, National Space Science Center, CAS)

Enterprise Map Construction based on EOLN model
Qiwen Zhang, Yunchuan Sun, Rongfang Bie (China, Beijing Normal University)

Study and Realization of a CRM System in Fuxin Bank
Qingxing Guo, Zhendong Xie, Xi Ning (China, Bank of FuXin)

Policy Enforcement upon Software Based on Microservice Architecture
Tugrul Asik, Yunus Emre Selcuk (Turkey, Yildiz Technical University)

Specifying Architecture of Knowledge Graph with Data Graph, Information Graph, Knowledge Graph and Wisdom Graph
Yucong Duan, Lixu Shao, Gongzhu Hu, Zhangbing Zhou, Quan Zou, Zhaoxin Lin (China, Hainan University)

Research on the Construction of Semantic Dictionary in the Football Field
Jiguang Wu, Ying Li (China, Communication University of China)

15:20 – 15:30  Coffee Break  Outside Queen Ann 180
15:30-17:30  Session 3A  Queen Ann 180
Session Chair: George Loukas

An eye for deception: A case study in utilising the Human-As-A-Security-Sensor paradigm to detect zero-day semantic social engineering attacks
Ryan Heartfield, George Loukas, Diane Gan (UK, University of Greenwich)

Evaluating the Impact of Malicious Spoofing Attacks on Bluetooth Low Energy Based Occupancy Detection Systems
William Oliff, Avgoustinos Filippopoulitis, George Loukas (UK, University of Greenwich)

Security and Privacy Requirements Engineering for Human Centric IoT Systems using eFRIEND and Isabelle
Florian Kammuller, Juan C. Augusto, Simon Jones (UK, Middlesex University)

A Communication Gateway Architecture for Ensuring Privacy and Confidentiality in Incident Reporting
Assessing the Cyber-Trustworthiness of Human-as-a-sensor Reports from Mobile Devices
Syed Sadiqur Rahman, Ryan Heartfield, William Oliff, George Loukas, Avgoustinos Filippoupolitis (UK, University of Greenwich)

ASTo: A Tool for Security Analysis of IoT Systems
Orestis Mavropoulos, Haralambos Mouratidis, Andrew Fish, Emmanouil Panaousis (UK, University of Greenwich)

15:30-17:30 Session 3B Queen Ann 175
Session Chair: Tin Tin San

Based Disparity Estimation Using Hill-Climbing Algorithm
Tin Tin San, Dr. Nu Wa (Myanmar, University of Computer Studies)

An encrypted medical image retrieval algorithm based on DWT-DCT frequency domain
Chunyan Zhang, Jingbing Li, Shuangshuang Wang, Zhaohui Wang (China, Hainan University)

An improved information hiding algorithm based on image
Ziqian Yuan, Zijie Guan (China, Zhongnan University of Economics and Law)

Data Structure and Triangulation Algorithm for Non-Uniform Landscapes
Yasunori Shiono, Takaaki Goto, Kensei Tsuchida (Japan, Ryutsu Keizai University)

Identifying and Localizing the Inter-Consistency Errors Among UML Use Cases and Activity Diagrams: An Approach Based on Functional and Structural Size Measurements
Hela Hakim (Tunisia, ISIMS)

Analysis of Perception of People to School Mottos
Rieko Fujita, Tokuro Matsuo, Teruhisa Hochin (Japan, Advanced Institute of Industrial Technology)

18:00 – 19:30 Award Presentation (Dinner Banquet) NOVOTEL Greenwich

Thursday, June 8, 2017
8:00 – 12:20 Registration Outside Queen Ann 180
8:00 – 10:00 Session 4A Queen Ann 180
Session Chair: Miltos Petridis

Load Experiment of the vDACS Scheme
Kazuya Odagiri, Shogo Shimizu, Naohiro Ishii (Japan, Sugiyama Jogakuen University)

Improving Web Application Reliability and Testing Using Accurate Usage Models
Gity Karam, Jeff Tian (USA, Southern Methodist University)

Anticipated Test Design and its Application to Evaluate and Select Embedded Libraries
Claurton Siebra (Brazil, Federal University of Paraiba)

Effects of FSM Minimization Techniques on Number of Test Paths in Mobile Applications MBT
Maiada Mahmoud, Yasser Mostafa, Haitham Hamza (Egypt, Arab Academy for Science, Technology and Maritime Tr.)

A Structural Rule-Based Approach for Design Patterns Recovery
Mohammed Al-Obeidallah, Miltos Petridis, Stelios Kapetanakis (UK, University of Brighton)

Model Driven Development of Mobile Applications Using Drools Knowledge-based Rule
Ei Ei Thu, Nwe New (Myanmar, University of Computer Studies)

8:00– 10:00  Session 4B  Queen Ann 175

Session Chair: Gongzhu Hu

Reusable Components For Adding Multi-Tenancy to Legacy Applications
Uwe Hohenstein (Germany, Siemens AG)

A Framework of Software Reusing Engineering Management
Xin Tao, Yang Liu (China, Technology and Engineering Center for Space Utilization, CAS)

Generation of Reducts and Threshold Functions Using Discernibility and Indiscernibility Matrices
Naohiro Ishii, Ippei Torii, Kazunori Iwata, Kazuya Odagiri, Toyoshiro Nakashima (Japan, Aichi Institute of Technology)

Predicting Gross Domestic Product Using Autoregressive Models
John Roush, Keith Siopes, Gongzhu Hu (USA, Central Michigan University)

Software Performance Prediction at Source Level
Erh-Wen Hu, Bogong Su, Jian Wang (USA, William Paterson University)

Modern Predictive Models for Modeling the College Graduation Rates
Emma Gunu, Wilson Gyasi, Carl Lee, Robert Roe (USA, Central Michigan University)

10:00 – 10:20  Coffee Break  Outside Queen Ann 180

10:20 – 12:20  Session 5A  Queen Ann 180

Session Chair: Weng Wen

Sentiment Analysis on Social Media Using Morphological Sentence Pattern Model
Youngsub Han, Kwangmi Kim (UAS, Towson University)

On Blockchain-Based Anonymized Dataset Distribution Platform
Shinsaku Kiyomoto, Mohammad Shahriar Rahman, Anirban Basu (Japan, KDDI Research Inc.)

Research on Service Recommendation Reliability in mobile computing
Weng Wen, Huaikou Miao (China, Shanhgai University)

Detection and Mitigation Of Wireless Link Layer Attacks
May Aye Chan Aung, Khin Phyoo Thant (Myanmar, University of Computer Studies)

Energy Efficiency Cluster Head Election using Fuzzy Logic Method for Wireless Sensor Networks
Wided Abidi (Tunisia, ENIT)
Remote sensing of damage bridge structure of free vibration by using finite element method based on jerk-energy
Mohamed Bouyahi (Tunisia, ENIT)

10:20 – 12:20  Session 5B  Queen Ann 175
Session Chair: Taoxin Peng

A Confidentiality Preserving Publicly Verifiable Computation for Multivariate Polynomials
Sun Jiameng, Zhu Binrui, Qin Jing, Ma Jixin (China, Shandong University)

Visualisation of Online Datasets
Christopher Downie, Taoxin Peng (UK, Edinburgh Napier University)

A Robust Algorithm of Encrypted Medical Volume Data Retrieval Based on 3D DWT and 3D DFT
Shuangshuang Wang, Jingbing Li, Chunyan Zhang, Zhaohui Wang (China, Hainan University)

The Impacts of Consumer’s Health Topic Familiarity in Seeking Health Information Online, A Solution Based on Consumer’s Perspective in Health Information Search, Ira Puspitasari

DRSS: Distributed RDF SPARQL Streaming
Amadou Fall Di, Zakia Kazi-Aoul, Aliou Boly, Elisabeth (France, Institut Supérieur d'Electronique de Paris)

On the Estimation of Time Series Data of Daily Life
Teruhisa Hochin, Hiroki Nomiya (Japan, Kyoto Institute of Technology)

An empirical investigation of the software integration success factors in GSD environment
Muhammad Ilyas, Siffat Ullah Khan

12:20 – 13:20  Lunch on your own

13:20 – 15:40  Session 6A  Queen Ann 180
Session Chair: Abhishek Tirkey

An efficient approach for real-time processing of RDSZ-based compressed RDF streams
Ndéye Bousso Dème, Amadou Fall Dia, Aliou Boly, Zakia Kazi-Aoul, Raja Chiky (Senegal, Université Cheikh Anta Diop de Dakar)

Coordination Support for Integrating User Centered Design in Distributed Agile Projects
Ohoud Almughram, Sultan Alyahya (Saudi Arabia, King Saud University)
Salient Object based Action Recognition using Histogram of Changing Edge Orientation (HCEO)
Hnin Mya Aye, Sai Maung Maung Zaw (Myanmar, University of Computer Studies)

Agile Web Development Methodologies: A Survey and Evaluation
Nasrin Ghasempour Maleki (Iran, Sharif University of Technology)

Curricular Change Management with Git and Drupal
Abhishek Tirkey, Kevin Gary (USA, Arizona State University)

On the Use of Visual Clustering to Identify Landmarks in Code Navigation
Sandeep Reddivari, Mahesh Kotapalli

13:20 – 15:40  Session 6B  Queen Ann 175
Session Chair: Zhen Wang
LogSumExp for Unlabeled Data Processing  
*Taoheng Hu, Jinhui Yu (China, Zhejiang University)*

Image Mosaicking for Oversized Documents with a Multi-Camera Rig  
*Zhen Wang, Weidong Geng (China, Zhejiang University)*

A stochastic revelation on the deterministic morphological change of 3x+1  
*Yucong Duan (China, Hainan University)*

Bidirectional Value Driven Design between Economical Planning and Technical Implementation Based on Data Graph, Information Graph and Knowledge Graph  
*Lixu Shao, Yucong Duan, Xiaoqing Sun, Quan Zou, Rongqi Jing, Jiami Lin (China, Hainan University)*

A Bisectional Multivariate Quadratic Equation System for RFID Anti-Counterfeiting  
*Xiaoyi Zhou, Jixin Ma, Xiaoming Yao, Honglei Li (China, Hainan University)*

16:00 – 18:00  Greenwich Tour

**Friday, June 9, 2017**

9:00 – 10:00  Session 4A  
Queen Court  
Technical Forum / Next SERA Conference / Closing Remarks

10:00 – 12:00  Session 4A  
Queen Court  
ACIS Board of Directors' Meeting

**Future Conference Information**

**IEEE/ACIS SNPD 2017**  
18th IEEE/ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing  
June 26-28, 2017, Kanazawa, Japan

**ACIS ACIT/CSII/BCD 2017**  
5th International Conference on Applied Computing and Information Technology  
July 9-13, 2017, Hamamatsu, Japan  
4th International Conference on Computational Science/ Intelligence and Applied Informatics  
July 9-13, 2017, Hamamatsu, Japan  
2nd International Conference on Big Data, Cloud Computing, Data Science & Engineering  
July 9-13, 2017, Hamamatsu, Japan

**IEEE/ACIS ICIS 2018**  
17th IEEE/ACIS International Conference on Computer and Information Science  
Singapore
ACIS Journal Information

International Journal of Networked and Distributed Computing (IJNDC)
IJNDC is a world-class international journal. IJNDC Journal has been indexed in ESCI and will ultimately be indexed in SCI approximately within one year.


International Journal of Software Innovation (IJSI)
IJSI is a world-class international journal. IJNDC Journal has been indexed in ESCI and will ultimately be indexed in SCI approximately within one year.

http://www.igi-global.com/ijsi

ACIS Official Website
http://www.acisinternational.org