

EDITORIAL PREFACE

*Nik Bessis, Department of Computer Science, School of Computing and Mathematics,
University of Derby, Derby, UK, & Department of Computer Science and Technology,
University of Bedfordshire, Luton, Bedford, UK*

It is with great pleasure to announce that the International Journal of Distributed Systems and Technologies (IJ DST) has been recently indexed in Scopus. Scopus is a highly influential index and the world's largest abstract and citation database of peer-reviewed literature and quality Web sources. Scopus is managed by Elsevier and covers 19,500 titles from more than 5,000 publishers. To be included in this index, a title's overall quality is assessed, taking into consideration the journal's authority in the field. Thus, let me express my gratitude to all the authors and the IJ DST community for their continuous support to this success.

The second issue of the fourth volume comprises four articles, selected after a careful review process, and is organized as follows.

In the first article, Shatnawi details an attempt that has been made to describe the relationship between the calendar time, the fault removal process and the testing-effort consumption in a distributed development environment. Software fault removal phenomena and testing-effort expenditures are described by a non-homogenous Poisson process (NHPP) and testing-effort curves respectively. Actual software reliability data cited in literature have been used to demonstrate the proposed model. The results are fairly encouraging.

In the second article, Sapiecha and Lukawski introduce two-layer scalable structures for storing data in a distributed RAM of a mul-

ticomputer (SD2DS). A data unit of SD2DS (a component) is split into a header and a body. The header identifies the body and contains its address in a network. The headers are stored in the first layer of SD2DS, called the component file, while the bodies are stored in the second layer, called the component storage. Both layers are managed independently. Details of the management algorithms are given, along with SD2DS variant suitable for storing plain records of data. The SD2DS is compared to similar distributed structures and frameworks. Comparison considerations together with test results are also given. The results proved superiority of SD2DS over similar structures.

In the third article, Andrews and Orphanides exploit the Formal Concept Analysis (FCA) that has been successfully applied to data in a number of problem domains. However, its use has tended to be on an ad hoc, bespoke basis, relying on FCA experts working closely with domain experts and requiring the production of specialised FCA software for the data analysis. In this article, authors describe how some open-source tools and techniques have been developed and used to address these issues and make FCA more widely available and applicable. Three examples of real data sets, and real problems related to them, are used to illustrate the application of the tools and techniques and demonstrate how FCA can be used as a semantic technology to discover

knowledge. Furthermore, it is shown how these tools and techniques enable FCA to deliver a visual and intuitive means of mining large data sets for association and implication rules that complements the semantic analysis. In fact, it transpires that FCA reveals hidden meaning in data that can then be examined in more detail using an FCA approach to traditional data mining methods.

In the fourth paper, Kumar describes that software architecture is very important in the development of large scale software solution and plays a very active role in achieving business goals. This research is an attempt to utilize the N-Tier software architecture for developing a prototype campus information system for Fiji National University (FNU-CIS), to address the issue of performance and scalability. To assist in the design and implementation of FNU-CIS, an extensive evaluation of campus information

systems is carried out to provide the benchmark on the current technology. FNU-CIS software architecture is designed with the implementation using JEE and CORBA. Experiments were carried out to assess the performance and scalability of the newly developed system. Several tests were carried out to measure the response time, throughput and latency of our system in distributed settings, and the results mainly favored FNU-CIS.

The editor wishes to thank the authors for their contribution to this issue and the reviewers for their useful suggestions and feedback to the authors. I wish readers found this issue useful in their research and academic activity.

Nik Bessis
Editor-in-Chief
IJDST

Nik Bessis is currently a Head of Distributed and Intelligent Systems (DISYS) research group, a Professor and a Chair of Computer Science in the School of Computing and Mathematics at University of Derby, UK. He is also an academic member in the Department of Computer Science and Technology at University of Bedfordshire (UK). He obtained a BA (1991) from the TEI of Athens, Greece and completed his MA (1995) and PhD (2002) at De Montfort University (Leicester, UK). His research interest is the analysis, research, and delivery of user-led developments with regard to trust, data integration, annotation, and data push methods and services in distributed environments. These have a particular focus on the study and use of next generation and grid technologies methods for the benefit of various virtual organizational settings. He is involved in and leading a number of funded research and commercial projects in these areas. Prof. Bessis has published over 170 papers, won 3 best paper awards and is the editor of several books and the Editor-in-Chief of the International Journal of Distributed Systems and Technologies (IJDST). In addition, Prof. Bessis is a regular reviewer and has served several times as a keynote speaker, conferences/workshops/track chair, associate editor, session chair and scientific program committee member.