Editorial Preface

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Jairo Gutierrez, Editor-in-Chief

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We start our second year of IJBDCN with a collection of very interesting articles. This issue contains four research articles dealing with proposals for new network architectural designs, quality of service in wireless networks, and a contribution to the field of security analysis of intrusion detection data.

The first article in this issue is “NetApp: Autonomic-Network-Based Application Architecture for Creating New Value-Added Services,” and in it, Tuan Loc Nguyen, Abbas Jamalipour, Francine Krief, and Guy Pujolle propose an architecture in which the applications and the services are not supported by a pre-existing network, but where the network itself grows out of the applications and the services that end users require. Their main goal is to address the needs of the ever-increasing number of adaptive and self-organizing ambient-aware applications and services appearing in modern networking environments. In the second article, “The Economic Value of Modularity in the IPQoS Network: The Real Options Approach (ROA),” Hak Ju Kim develops and tests a model to show the extent of modularity in network architectural design. Two main concepts from the fields of management and economics are studied: modularity and complementarity. The article shows that modularity is a valuable aspect of network design but at the same time warns that its impact may be limited by complementarity. A practical goal of the article is to assist network service providers in the task of making network design decisions. The framework presented can be used to explain how network-based services interact with the design of networks that employ complementary components under uncertainty. This will help designers with their strategic design decisions; in particular, whether to modularize or not and, if so, by how much, by establishing the value of modularity in network design.

In the third article, “Supporting Real-Time Service in Packet-Switched Wireless Networks,” Maode Ma and Zheng Xiang introduce a scheduling scheme for the DQRUMA (Distributed Queueing Request Update Multiple Access) protocol to control the packet transmission in packet-switched wireless networks. They conducted simulation experiments to evaluate the performance of the proposed algorithm and compared its real-time performance with those of other packet transmission policies. Their findings showed that the algorithm is efficient under a mixture of traffic conditions. Finally, the last article, “Risk Factors to Re-
retrieve Anomaly Intrusion Information and Profile User Behavior,” from Yun Wang and Lee Seidman, discusses the findings of an extensive study of security audit data using two methods: bootstrap resampling and logistic regression modeling. Their work shows that these techniques are very useful in the task of identifying and understanding risk factors, which is one of the key processes of proactive network security. The significant amount of data being collected by security audit logs and intrusion detection mechanisms would be of little use without the assistance of statistical methods such as the ones presented in this article to analyse the data and extract vital information.

Best regards and happy reading. If you have any feedback or suggestions, please do not hesitate to contact me via e-mail at j.gutierrez@auckland.ac.nz.

Jairo Gutierrez
Editor-in-Chief