Editorial

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Biographical notes: Lorna Uden is Professor Emeritus of IT Systems in the Faculty of Computing, Engineering and Technology at Staffordshire University. Her research interests include technology learning, HCI, mobile learning, activity theory, knowledge management, web engineering, multimedia, e-business, service science and innovation, Semantic Web, software as a service (SaaS) and problem-based learning.

Welcome to V7N4 of this journal. The first paper is '*MultiAspectForensics*: mining large heterogeneous networks using tensor', by Koji Maruhashi, Fan Guo and Christos Faloutsos. According to these authors, modern applications such as web knowledge bases, network traffic monitoring and online social networks involve an unprecedented amount of 'heterogeneous' network data, with rich types of interactions among nodes. The question is, how do we find patterns and anomalies for heterogeneous networks, with millions of edges that have high dimensional attributes, in a scalable way? These authors have introduced *MultiAspectForensics*, a novel tool to automatically detect and visualise bursts of specific subgraph patterns within a local community of nodes as anomalies in a heterogeneous network, leveraging scalable tensor analysis methods. They present empirical results of the proposed method on three datasets from distinct application domains, and discuss insights derived from these discovered patterns. These authors argue that that their algorithm can be applied to higher dimensional datasets. More research is needed to empirically validate the results.

The second paper is 'Towards an approach to design and enforce security in web service composition', by Fernando Lins, Julio Damasceno, Bruno Silva, Robson Medeiros, Andre Souza, Fabricio Teles, David Aragao, Erica Sousa, Nelson Rosa, Bryan Stephenson, Hamid Motahari-Nezhad and Jun Li. According to these authors, customers of a composite service often have security needs (e.g., about the confidentiality of the data that they share with the service) that must be preserved by one or more service providers participating in the composition. The composite service provider may establish service level agreements (SLAs) with its service customers, which impose security constraints that must be satisfied when the service is being delivered.

However, these authors argue that the incorporation of security concerns is not explicitly considered in service composition until after the business process has been mapped into service composition executable artifacts, or even in the service composition execution. The explicit modelling and enforcement of security in this context is still a challenge because of the variety in the security background of diverse experts involved in the business process definition, no clear identification of security requirements at the business process level, absence or complexity of notations to express them, difficulty in

integrating them into the business process definition, complexity of mapping them into security mechanisms and complexity of enforcing them at runtime.

In this paper, the authors present an approach called Sec-MoSC to deal with security requirements of service composition at various levels of abstraction. This approach adopts some basic concepts of model driven architecture (MDA) and streamlines the modelling, translation and enforcement of security requirements annotated into business processes. These authors have prototyped the Sec-MoSC solution architecture, which includes a security-extended BPMN editor to support service composition at modelling time, a translator that automatically generates platform specific models and an auxiliary engine that coordinates with security enforcement modules to realise the security requirements at execution time. Further work is required to dynamically deploy the engines on virtual machines to enable this approach to scale out.

The third paper is, 'A scalable and efficient Web 2.0 reader platform for mashups', by Osama Al-Haj Hassan and Bassam Al Shargabi. Feed readers provide end-users with updates of content of feeds they subscribe to. On the other hand, mashups are conceptually web services created by end-users and hosted by mashup platforms which empower end-users with a tool to query the web, based on their personalised interests. These authors argue that drawback of the current mashup platforms is that they do not provide end-users with notifications of any updates in the result of executing their mashups. In other words, end-users need to access the mashup platform in order to *directly* execute mashups and check their results. This is tedious task for end-users to do, especially when they are interested in large number of mashups.

According to these authors, the drawback of feed readers is that they only deal with feeds. Usually, end-user requirements go beyond fetching information from feeds. Many end-users are interested in a more comprehensive way of retrieving information. In their paper, these authors combine the best of mashup readers and mashup platforms in order to design a novel Web 2.0 application called mashup reader. Mashup readers enable end-users to subscribe to their favourite mashups and obtain updates of the result of executing those mashups. In this paper, they introduce the design of a mashup reader, provide ways to improve its efficiency, and evaluate its execution mechanism. Their experiments show that the mashup reader is an efficient and scalable Web 2.0 platform which provides end-users with an effective web querying tool. However more research is needed to verify the results.

The fourth paper is, 'Sentiment classification of Chinese online reviews: analysing and improving supervised machine learning', by Pei Yin, Hongwei Wang and Lijuan Zheng. According to these authors, with the rapid growth and wide application of web services, the research on how to accurately, efficiently and rapidly find the desired services becomes increasingly important and challenging. Although Semantic Web services discovery approaches achieve sufficient precision by employing ontology to extend semantic information, the high cost of defining ontology and the lack of standards to integrate or reuse existing ontology prevent them from widespread adoption in practice. On the other hand, non-Semantic Web services discovery approaches apply proven techniques developed in the field of information retrieval to discover and rank web services automatically, which do not involve an additional level of semantic mark up. However, the existing non-Semantic Web services discovery approaches are usually rather inefficient due to their low discovery precision and/or long discovery duration.

In order to address these problems, these authors propose a novel clustering facilitated web services discovery model (CFWSFinder) by introducing the

state-of-the-art machine learning techniques into services representing, services clustering and services matching processes, respectively. Compared with the existing models, CFWSFinder has several characteristics. First, in services representing process, CFWSFinder imports WordNet and Latent Semantics Index to represent non-Semantic Web services as the low-dimensional compact semantic feature vectors; second, in services clustering process, CFWSFinder employs a modified kernel batch self-organising map (KBSOM) neural network to minimise the services discovery duration; third and most importantly, in services matching process, by using the category label information achieved from services clustering process, CFWSFinder can adopt a supervised term weighting scheme and adaptive metric learning method to ameliorate the services discovery precision. These authors argue that experimental results performed on the real-world web services collection demonstrate the feasibility of the CFWSFinder. The introduction of the state-of-the-art sparse learning theory to enhance services representation will be a good idea.