Editorial

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

Welcome to V11N2 of *IJWET*. This issue consists of four papers. The first paper is 'Leveraging fuzzy dominance relationship and machine learning for hybrid web service discovery' by Merzoug Mohammed, Chikh Mohammed Amine and Hadjila Fethallah. This paper investigates the problem of searching and ranking web services. The solution takes into account several parameters as well as several matching functions during the ranking process. In this paper, the authors propose an OWL-S matchmaker that conjointly utilises four textual similarity measures and a pure logic matching in order to search and rank the advertised services. The main advantage of the proposed fusion algorithm is to allow a higher discrimination power between the services through the use of the fuzzy dominance relationship, in addition to that, the selected similarity functions cover various complementary matching aspects, and hence the specificities of the requests are more likely to be handled. The authors have conducted exhaustive studies based on the OWLS-TC benchmark to verify the effectiveness and efficiency of their approach. The experimental results showed that the proposal outperformed, in most cases, many existing techniques.

The second paper is, 'A generic and high-performance RDF instance generator', by Tanguy Raynaud, Samir Amir and Rafiqul Haque. In this paper, the authors present a solution called GAIA, a generic generator which allows users to generate RDF triples by conforming to any ontology. GAIA is built on an in-memory architecture and it relies on parallelisation techniques which guarantee high-performance. It has been tested with a large-scale ontology called NCBI. The results of experiments show that GAIA performs reasonably well with large-scale ontologies. The experiments showed that the generator can scale-up to terabytes of data. They also found that the generator can read any ontology that is compatible with OWL-API including OWL, RDF, and RDFS. Although their generator outperformed better than the LUBM generator, one of the critical shortcoming is, GAIA cannot deal with property restriction such as some value from and all values from. Further work is needed to enhance GAIA to deal with such property restrictions. In addition, GAIA is currently limited to OWL-based ontology schema and it

is important to extend GAIA so that it can read ontologies written in other technologies such as common logic.

The third paper is 'Towards measurement of structural complexity for ontologies' by Niyati Baliyan and Sandeep Kumar. According to these authors, it is important to measure the complexity of ontologies in order for users to better understand, maintain, reuse and integrate them. These authors argue that existing measures for the complexity of ontology either handle complexity at schema and instance levels or define subjective parameters to measure ontology complexity. To overcome this, they present a semi-automated framework to measure the structural complexity at different abstraction levels of ontology. They describe complexity measures at various levels of a modular ontology, in line with the complexity measurement of component-based software. The complexity obtained through the proposed framework can be used to rank ontologies based on the reasoning that ontology complexity is inversely related to ontology quality. Despite the claim by these authors, empirical studies must be conducted to verify its uses.

The last paper is 'Faceted operations on composed RDF ontologies' by Anastasia Analyti and Ioannis Pachoulakis. In this paper, the authors consider RDF ontologies whose content is indexed by faceted terms. Through primitive faceted formulas using faceted terms and a list of validity intervals, they were able to take to union of all RDF ontologies indexed by these terms and are valid in all provided validity intervals. By combining both union and intersection operators on primitive faceted formulas, complex expressions can be formed that return a computed RDF ontology, its faceted indexing and validity intervals. All algorithms are provided along with their complexity. Complex expressions formed using faceted terms and a list of validity time intervals allows the user to express his/her wishes for the characteristics of the resulting ontology. A disadvantage of this approach is that they consider RDF ontologies without blank nodes. This problem must be addressed in future work.