UNIVERSITÀ DEGLI STUDI DI BARI ALDO MORO

DIPARTIMENTO DI INFORMATICA

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Bari, June 26, 2019

Semantic Web Science Association

Distinguished Dissertation Award Committee

Letter of Recommendation

TO WHOM IT MAY CONCERN,

I highly support Dr. Petar Ristoski's nomination for this year's SWSA Distinguished Dissertation Award.

I met Petar presenting his work during different editions of ISWC and ESWC. He has always showed very good knowledge of the literature and deep knowledge of his work. He provided clear and straightforward presentations, resulting in interesting and promising advances of the state of the art.

Petar Ristoski focused his research activity on the problem of finding relevant information in the huge volume of the Linked Open Data Cloud, which might include integrating pieces of data from many different sources. To address these issues, he has developed several algorithms and approaches.

To start with, Petar has developed approaches for converting such big datasets, which are published in a graph format, to propositional feature vectors, thus making it possible for standard applications and algorithms to consume these data without a need for core changes. These approaches include efficient complex graph transformation algorithms aiming at representing the data to the user in a low dimensional feature vectors and that can be easily integrated based on the user's needs. One of the most recognized contribution is RDF2Vec which is based on deep neural networks and is able to efficiently converts very large knowledge graphs in low dimensional feature vectors. RDF2Vec has been exploited both in research and real-world applications, for analyzing statistics, building recommender systems, entity and document modeling, and taxonomy induction.

Petar Ristoski has also developed a state-of-the-art approach for feature selection in hierarchical feature spaces, representing an important contribution to reduce data complexity and dimensionality when dealing with large datasets. Furthermore, he developed a novel feature selection solution grounded on combining standard feature selection techniques, used in data mining, with novel algorithms for traversing hierarchical structures and identifying the most relevant data for the user's application.

Overall, the advances proposed by Petar Ristoski are innovative, of high-quality and equipped with a rather solid comparative experimental study. The thesis certainly represents an important, original and novel contribution in the research perspective of developing new approaches for performing Data Mining on Linked Open Data and Knowledge Graphs. As part of his Ph.D., Patar authored over 25 papers constituting the core bone of his thesis. These papers have been published in the top journals and conferences in the Semantic Web area (e.g. Journal of Web Semantics, Semantic Web Journal, Knowledge-Based Systems, ESWC/ISWC/K-CAP/ECML), which demonstrates the very good scientific maturity Petar reached throughout the years. Even more so, Petar Ristoski has won several awards in the Semantic Web community.

I highly recommend Dr. Petar Ristoski for the SWSA Distinguished Dissertation Award and I remain available for further information and clarification.

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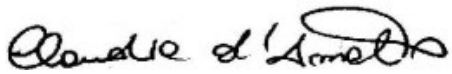
Sincerely,



Claudia d'Amato