IJCAI 2017 Workshop on Semantic Machine Learning
August 20, 2017
Melbourne, Australia

The 4th International Workshop in
Semantic Machine Learning (#SML) Workshop Series

EDITORS:

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Welcome to #SML17

Learning is an important attribute of an AI system that enables it to adapt to new circumstances and to detect and extrapolate patterns. Machine Learning (ML) has seen a tremendous growth during the last few years due in part to the successful commercial deployments. The interest has also been fueled by the recent research breakthroughs brought about by deep learning. ML is however not a silver bullet as it is made out to be, and currently has several limitations in complex real-life situations. Some of these limitations include: i) many ML algorithms require large number of training data that are often too expensive to obtain in real-life, ii) significant effort is often required to do feature engineering to achieve high performance, iii) many ML methods are limited in their ability to exploit background knowledge, and iv) lack of a seamless way to integrate and use heterogeneous data. Approaches that formalize data, functional and domain semantics, can tremendously aid addressing some of these limitations. The so-called semantic approaches have been increasingly investigated by various research communities and applied at different layers of ML, e.g. modeling representational semantics in vector space using deep learning architectures, and modeling domain semantics using ontologies.

The fourth IJCAI workshop on Semantic Machine Learning seeks to bring together researchers and practitioners from all these communities working on different aspects of semantic ML, to share their experiences, exchange new ideas as well as to identify key emerging topics and define future directions. The workshop programme includes i) invited keynote from Dr. Amy Shi-Nash, Commonwealth Bank, Australia, ii) 4 paper sessions with oral presentations from international research groups, and iii) an invited panel on Value Aid in incorporating Structured, Semantic Knowledge Bases into Machine Leaning Approaches, with renowned research leaders from Academia and Industry as panelists.

We wish to express our deep appreciation to the programme committee members and the additional reviewers who shared their valuable time and expertise in support of the SML17 review process. Special thanks to our advisory committee members Prof. Amit Sheth, Prof. Fausto Giunchiglia, and Prof. Timos Sellis for their constant encouragement and guidance in the organization. We also wish to express our gratitude to our supporting organizations: The Institute for Infocomm Research (A*STAR), Swinburne University and George Mason University.

Rajaraman Kanagasabai, Ahsan Morshed, Hemant Purohit
Chairs, #SML17

SML17 Organisation

Chairs:

Rajaraman Kanagasabai, Institute for Infocomm Research, Singapore

Ahsan Morshed, Swinburne University, Melbourne, Australia

Hemant Purohit, George Mason University, USA

Advisory Committee:

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Programme

Date: 20th August, 2017, Sunday

Time: 8.30 - 18.00

Venue: RMIT University Building 80 (also known as SAB or Swanston Academic Building)

Address: 445 Swanston Street, Melbourne, Victoria, 3000

08:30 - 10:00	**Paper Session I (3 papers: each 25 min + 5 min Q&A)** • Evan Dennison Livelo, Andrea Nicole Ver, Jedrick Chua, John Paul Yao and Charibeth Cheng. A Hybrid Agent for Automatically Determining and Extracting the 5Ws of Filipino News Articles. • Heng Chen, Yongjuan Zhang, Chunhong Lin, Liwen Zhang and Tao Chen. Construction of Viral Hepatitis Bilingual Bibliographic Database, Mining of Viral Hepatitis Related Protein Text and Integrating with Uniprot Protein Database. • Yang Gao, Linjing Wei, Heyan Huang and Qian Liu. Topical Sentence Embedding for Query Focused Document Summarization.
10:00 - 10:30	== COFFEE BREAK ==
10:30 - 12:30	**Paper Session II (3 papers: each 25 min + 5 min Q&A)** • Luis Palacios, Yue Ma, Gaëlle Lortal, Claire Laudy and Chantal Reynaud. Data Driven Concept Refinement to Support Avionics Maintenance. • Andreea Salinca. Convolutional Neural Networks for Sentiment Classification on Business Reviews. • Ritesh Ratti, Himanshu Kapoor, Shikhar Sharma and Anshul Solanki. Semantic extraction of Named Entities from Bank Wire text.
12:30 - 14:00	== LUNCH BREAK ==
14:00 - 14:30	**Paper Session III (1 paper: 25 min + 5 min Q&A)** • Abdullah Alharbi, Yuefeng Li and Yue Xu. Enhancing Topical Word Semantic for Relevance Feature Selection.

14:30 - 15:30	**Keynote** Speaker: Amy Shi-Nash, PhD Head of Data Science, Commonwealth Bank, Australia Title: How can Machine Learning/AI help Banks and Customers
15:30 - 16:10	**Panel Discussion** *Topic:* Value Aid in incorporating Structured, Semantic Knowledge Bases into Machine Leaning Approaches *Panelists:* • Prof. Dimitrios Georgakopoulos, Swinburne University of Technology, Australia • A/Prof. Xiuzhen (Jenny) Zhang, RMIT University, Australia • Dr. Truyen Tran, Lecturer, Deakin University, Australia • Dr. Yuan-Fang Li, Senior Lecturer, Monash University, Australia • Prof. Arkady Zaslavsky, CSIRO
16:10 - 16:40	== COFFEE BREAK ==
16:40 - 17:40	**Paper Session IV (2 papers: each 25 min + 5 min Q&A)** • Yang SHAO. Several simple neural networks for evaluating semantic textual similarity. • Fenglong Ma, Radha Chitta, Saurabh Kataria, Jing Zhou, Palghat Ramesh, Tong Sun and Jing Gao. Long-Term Memory Networks for Question Answering.
17:40 - 18:00	== CONCLUDING REMARKS ==

Keynote Speaker

Dr. Amy Shi-Nash

Commonwealth Bank, Australia

Title:

How can Machine Learning / AI help Banks and Customers

Bio:

Amy is an executive leader with a proven track record of creating value and competitive advantage through data-driven culture and innovation. As the Head of Data Science at Commonwealth Bank, she is responsible for driving strategic data science capability, enable business transformation and differentiated customer experience. Prior to CBA, Amy was the founding member and Chief Data Science Officer of DataSpark, Singtel's data analytics spin-off. Responsible for driving data-led innovation and creating new revenue steams by combining telco data with advanced analytics and big data technology. Amy is a Science Board Member of i-Com and since 2013 is Industry Track Program Committee Member of ACM KDD. She is a frequent public speaker, a co-inventor and co-author of multiple Patents and Publications. Amy holds a Ph.D in data mining, a Master in AI and an MBA.