

Ryerson's LS³ Launches Research Initiative on Social Network Analysis

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Toronto, October 15, 20. Ryerson's Laboratory for Systems, Software and Semantics (LS³) announced today the launch of a new research initiative on Semantics-enabled Social Network Analysis jointly funded by Natural Sciences and Engineering Research Council Canada (NSERC) and ThinkCX.

This initiative will concentrate on formulating a multi-faceted framework that will collectively consider *social interactions* (network structure of connections), *temporal behaviour* (chronological order of activities), and *semantics of social content* (the underlying meaning of user content) in order to perform social media analytics. The research platform will consist of the development and/or adaptation of *i*) graph techniques that analyze the network structure of social networks; *ii*) Semantic Web technology that would discover and model latent semantics of social media content; and *iii*) pattern mining algorithms that can point to recurring behavioural and contextual patterns within the social platform.

The substantial influence of social media and networks has attracted significant attention from various industries that are interested in issues such as user engagement, customer retention, and collective intelligence, to name a few. The market for social media and networking and its related analyses is expected to exceed \$7 billion dollars in the next year and will engage the largest user base across the globe. The potential for this technology is immense and, if appropriately used, can result in concrete actionable insight for users across the board ranging from individual end-users to industrial organizations. There are close to 40,000 employment positions in this area around the world and growing, and even more indirect employment, such as social media marketing. This research project is quite timely and well suited for this area as it will develop leading edge semantics-enabled social media and network analysis techniques that will give our Canadian industrial partner a market edge.

As one of its goals, this research project will involve the training of several Masters and PhD students and open 3-year research positions for research support staff, programmers, and a Postdoctoral fellow.

Areas of research activity & knowledge/technology breakthrough:

- 1) Automated extractive user profiling technology that focus on the identification of user characteristics from social network platforms to accurately model users' preferences
- 2) Techniques that would recognize social movement and emergent behavioral patterns expressed as semantically coherent topics and identify the relation of such patterns with the extracted semantic communities.

About LS³

LS³ is home to industry-sponsored and government-funded R&D projects in software engineering, quality engineering, semantic Web, linked open data, and knowledge engineering. The research in our lab provides learning opportunities for Ryerson's undergraduate and graduate students as well as visiting scientists in an exciting and dynamic environment. We assist in linking industrial research projects with expert teams within academia to find solutions to industry challenges. We also help manage these research projects and work together to secure matching funding from government programs. Industrial partners are encouraged to contact us and explore opportunities for collaboration. Our current projects have resulted in high impact patent, publication and products for our partners. For more information, please visit <http://ls3.rnet.ryerson.ca/>