



Award Details

Mining interesting patterns from big data

Research Details

Competition Year:	2017	Fiscal Year:	2020-2021
Project Lead Name:	Leung, CarsonKaiSang	Institution:	University of Manitoba
Department:	Computer Science	Province:	Manitoba
Award Amount:	23,000	Installment:	2 - 5
Program:	Discovery Grants Program - Individual	Selection Committee:	Computer Science
Research Subject:	Database management	Area of Application:	Computer software
Co-Researchers:	No Co-Researcher	Partners:	No Partners

Award Summary

In the current era of big data, high volumes of a wide variety of valuable data of different veracity (e.g., imprecise or uncertain data like sensor data and medical lab test results, in which the contents are uncertain due to factors like inherited measurement inaccuracies or sampling frequency) can be easily generated or collected at a high velocity. Consequently, we are drowning in data but starving for knowledge. In order to be able to make sense of these data, data science solutions for big data management and big data mining (which discovers implicit, previously unknown e efficient, user-friendly, and powerful data science system for mining interesting patterns from big data. Specifically, I plan to (1) adapt the developed algorithms to take into account the user preference and push these user constraints inside the mining process so that the resulting algorithms only output interesting patterns and no post-processing step is needed; (2) mine (3) further improve performance so as to provide users with real-time responses by exploring other optimizations and techniques (e.g., Apache Spark, Scala) and further reduce the memory requirements (e.g., by adapting Bigtable); (4) explore other quantitative (5) explore real-life applications (e.g., mining social networks, Web, telecommunication data, agricultural data, meteorological data, news feed, tweets, blogs) and find other interesting patterns such as trends, sequences and (6) develop data visualization This, in turn, helps users to enrich their knowledge so that they could promptly take appropriate actions or to make the best (business or military) decision, which would consequently have significant positive impacts on the improvement of human life and the benefits to Canadian economy as well as national defense