

Jaroslav Szlichta, PhD

Assistant Professor, Faculty of Science at University of Ontario Institute of Technology
Oshawa, ON, CA

Award-winning big data analytics expert examines big data cleaning to improve accuracy of predictors and trends

With an infinite amount of data swirling around vast global networks, big data analytics is exploding not only as a means to process and understand abundant information, but as a key method for predicting trends in social and economic behaviour. While data availability continues to gain rapid speed, the challenge lies in ensuring its accuracy.

Human error produces ‘dirty data’ which triggers incorrect analytics and leads to inaccurate business decisions. Jaroslav Szlichta, PhD, Assistant Professor in the Faculty of Science, is focused on data analytics, business intelligence and big data cleaning. His latest research aims to improve the rate of clean data, which would significantly improve data accuracy, and lead to more precise data analytics predictions and trends.

Awarded a post-doctoral fellowship by Mitacs Elevate in 2014, Dr. Szlichta’s research focused on big data integration and continuous data cleaning. He developed an algorithm to automatically integrate and clean all data before any analytics were performed to ensure more accurate outcomes. In 2013, Dr. Szlichta was appointed post-doctoral fellow in the Department of Computer Science at the University of Toronto, before joining UOIT in July 2014. He brings award-winning, big data analytics expertise to the university and has developed an undergraduate course on the subject.

Applying his interest in math to computer science, Dr. Szlichta earned his Master of Science in Engineering from the Faculty of Electronics and Information Science at the Warsaw University of Technology in Warsaw Poland in 2009; and received his Doctorate in Computer Science from the Department of Computer Science and Engineering at York University in Toronto, Ontario in 2013. During his doctoral studies, he was appointed a three-year research fellowship at the IBM Centre for Advanced Studies (CAS) in Markham, Ontario; and in 2012, he received the IBM CAS Research Student of the Year Award.

A former software developer for Comarch Research & Development in Warsaw, he developed the WYSIWYG reporting system OCEAN GenRap, a novel data analytics reporting solution. Recognized for his collaborative work, Dr. Szlichta received the prestigious CeBIT Business Award. He is also a member of the Big Data Benchmark Community, a global community group aimed at developing a data set that may be used as a benchmark for evaluating research.

Education/Learning, Research, Information Technology and Services

Big Data, Business Intelligence, Data Analytics, Information Integration, Heterogeneous Computing, Web Search, Machine Learning, Data Curation, Data Cleaning, Cloud Computing, Data Mining, Optimization of Queries for Business Intelligence, Data Science

Expressiveness and Complexity of Order Dependencies
University of Waterloo, Database Research Group Meeting

Fundamentals of Order Optimization

Invited Talk, University of Waterloo

Fundamentals and Applications of Order Dependencies

University of Toronto DB Seminar

Chasing Order Dependencies

Invited Talk, Carleton University

Applications for Order Dependencies in IBM DB2

Invited Talk, IBM Research Almaden

Optimizing Business-Intelligence Queries in DB2 with Order Dependencies

Invited Talk, AT&T Labs

Queries With Dates

Invited Talk, Warsaw University of Technology

York University

PhD Computer Science

Warsaw University of Technology

MSE Computer Science

Mitacs Elevate Post-doctoral Fellowship Program

Awarded \$57,000 over one year to support his research, Dr. Szlichta focused on big data integration and continuous data cleaning.

Post-doctoral Fellow, Department of Computer Science, University of Toronto

Appointed post-doctoral fellow to continue his research into big data analytics, and data cleaning.

IBM CAS Research Student of the Year Award

Awarded to a student who has shown outstanding insight and perspective that has contributed to IBM in a matter of great importance. During his research fellowship, Dr. Szlichta worked closely with IBM on order dependencies in databases, and proved to be a key resource in developing a prototype to exploit order optimization in DB2, and to optimize date predicates using generated subqueries.

IBM CAS Research Fellowship

During his doctoral studies, Dr. Szlichta was appointed to a three-year research fellowship and awarded \$102,000 within this highly competitive worldwide program, which honours exceptional doctoral students who have an interest in solving problems that are important in practice (and to IBM) and fundamental to innovation in many academic disciplines and areas of study.

2007 CeBIT Business Award

Awarded to Dr. Szlichta for his collaborative work in designing and implementing OCEAN GenRap system, an innovative data analytics reporting solution. CeBIT is the world's largest international computer exhibition.

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