

Masoud Makrehchi, PhD

Associate Professor, Faculty of Engineering and Applied Science at University of Ontario Institute of Technology

Oshawa, ON, CA

Leading social media research analytics to predict trends in behaviour for safer communities

Social media yields constant online chatter and offers up unparalleled access to society's diverse views and beliefs. Leading an emerging field, Masoud Makrehchi, PhD, Associate Professor in the Faculty of Engineering and Applied Science, is one of Canada's first researchers to mine and analyze social media data to help solve real-world problems. Working with law enforcement data, Dr. Makrehchi's novel research uses social media to predict crime rate direction in neighbourhoods. Extracting gold from an abundance of social media babble, he is developing unique algorithms and predictors for analytics to build better, safer communities. Along those lines, his research also focuses on modelling bullying behaviour in small communities. He aims to create a universal tool for modelling and simulation of dynamic social agent networks; allowing analysts, teachers, and law enforcement officers to analyze bullying behaviour, impact and consequences; and generate prediction models across ethnicity, gender, and disability.

In collaboration with the University of Ottawa, Dr. Makrehchi is using social media to understand stock market movement, particularly during initial public offering (IPO). He is analyzing twitter feeds to determine public sentiment for pricing IPOs, and identifying this correlation to stock market success.

A staunch advocate for social justice, Dr. Makrehchi joined UOIT in July 2012, following his role as a senior research scientist in Research and Development for Thomson Reuters in Minneapolis-St. Paul, Minnesota, where he served as a consultant in 2013. From 2002 to 2007, he was a research assistant in the Pattern Analysis and Machine Intelligence Lab, and the Learning Objects Repositories NETWORK (LORNET) a five-year, NSERC-funded project; both in the Department of Electrical and Computer Engineering at the University of Waterloo in Waterloo, Ontario. While there, he earned his Doctorate in Electrical and Computer Engineering in 2007. Dr. Makrehchi gained international industry experience as a systems analyst and project manager for ICT projects in various organizations including Irankhodro Automotive Industries in Tehran, Iran. In 1994, he received his Master of Science in Computer Engineering from Shiraz University in Shiraz, Iran, and in 1991, he obtained his Bachelor of Science in Electrical and Computer Engineering from the Iran University of Science and Technology.

Education/Learning, Research, Computer Hardware, Computer Networking, Computer Software, Computer/Network Security, Electrical Engineering, Information Technology and Services, Social Media

Social Computing and Human Computation, Big Data Analytics, Social Media Analytics, Mining and Analysis of Social Networks, Text and Data Mining, Artificial Intelligence and Machine Learning, Recommender Systems

Institute of Electrical and Electronics Engineers (IEEE), Professional Engineers Ontario

How to Predict Social Trends by Mining User Sentiments

International Conference on Social Computing, Behavioral-Cultural Modeling, and Prediction (SBP-2015)

The Correlation Between Language Shift and Social Conflicts in Polarized Social Media
IEEE/WIC/ACM International Conference on Web Intelligence

Stock Prediction Using Event-based Sentiment Analysis
IEEE/WIC/ACM International Conference on Web Intelligence

Social Links Recommendation by Learning Hidden Topics
Association for Computing Machinery (ACM) Conference on Recommender Systems

Query-relevant Document Representation for Text Clustering
Fifth International Conference on Digital Information Management

Text Clustering Using Taxonomy
2008 IEEE/WIC/ACM International Conference on Web Intelligence

Automatic Extraction of Domain-Specific Stopwords from Labeled Documents
2008 European Conference on Information Retrieval

A Text Classification Framework with a Local Feature Ranking for Learning Social Networks
2007 IEEE International Conference on Data Mining

University of Waterloo
PhD Electrical and Computer Engineering

Shiraz University
MSc Computer Engineering

Iran University of Science and Technology
BSc Software Engineering

Best Paper Award, 2014 International Conference on Social Computing, Behavioral-Cultural Modeling, and Prediction (SBP14)

Awarded for his co-authored, peer-reviewed, research paper *Winning by Following the Winners: Mining the Behavior of Stock Market Experts in Social Media* at the SBP14 Conference in Washington, D.C.

Senior Member, IEEE

Dr. Makrehchi has made major contributions to his field, advancing social media mining and analytics techniques to predict behavioural outcomes.

Challenge Award, 2012 International Conference on Social Computing, Behavioral-Cultural Modeling, and Prediction (SBP12)

Dr. Makrehchi received the award for his research *Conflict Thermometer: Predicting Social Conflicts by Analyzing Language Gap in Polarized Social Media* at SBP12 in College Park, Maryland.

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