

2019 Manulife Day

FRIDAY, OCTOBER 25, 2019 – 9:30 AM TO 2:15 PM EDT

The Waterloo Artificial Intelligence Institute at the University of Waterloo (Waterloo.ai) invites you to attend the 2019 Manulife Day, to be held on Friday, October 25, 2019 in Engineering 7 on the University of Waterloo campus.

This year's event consists of presentations by Manulife and University of Waterloo researchers, as well as a panel on applications of AI in Finance.

Registration (Passcode: ManulifeDay2019) is required. However, the event is free and lunch is included in your registration.

Schedule

Friday, October 25, 2019

<i>Time</i>	<i>Event</i>
9:30 am – 10:00 am	<p>Cindy Forbes, Manulife • E7-2317</p> <p><i>Manulife's AI & Advance Analytics Journey</i></p> <p>At Manulife we are committed to provide best services by following our mission statement: “Decisions made easier. Life made better.” In this talk Cindy Forbes will talk about the importance of Manulife's collaboration with University of Waterloo, AI institute. She will also provide an overview of Manulife's journey to establish AI & Advanced Analytics functions and will outline the plan for future.</p>
10:00 am – 10:30 am	<p>Yaoliang Yu, David R. Cheriton School of Computer Science, University of Waterloo • E7-2317</p> <p><i>Multivariate Triangular Quantiles for Novelty Detection</i></p> <p>Novelty detection, a fundamental task in machine learning, has drawn a lot of recent attention due to its wide-ranging applications and the rise of neural approaches. In this work, we present a general framework for neural novelty detection that centers around a multivariate extension of the univariate quantile function. Our framework unifies and extends many classical and recent novelty detection algorithms,</p>

<i>Time</i>	<i>Event</i>
	and opens the way to exploit recent advances in flow-based neural density estimation. We adapt the multiple gradient descent algorithm to obtain the first efficient end-to-end implementation of our framework that is free of tuning hyperparameters. Extensive experiments over a number of real datasets confirm the efficacy of our proposed method against state-of-the-art alternatives.
10:30 am – 10:50 am	Coffee Break
10:50 am – 11:20 am	<p>Dave Keirstead, Manulife • E7-2317</p> <p><i>Examples of Advanced Analytics with Manulife</i></p> <p>Embedding machine learning and Advanced Analytics across all facets of our business at Manulife is one of our key strategies. This is to drive value for our customers and shareholders. In this talk Dave Keirstead and his team members will share examples, a bit about Manulife’s journey and the impact of AI on the business.</p>
11:20 am – 11:50 am	<p>Olga Vechtomova, Department of Management Sciences, University of Waterloo • E7-2317</p> <p><i>Disentangled Representation Learning for Text Style Transfer</i></p> <p>In this talk, I will present our latest work on learning disentangled representations of factors of variation in text, such as style and content. We proposed an effective approach, which incorporates auxiliary multi-task and adversarial objectives, for style prediction and bag-of-words prediction, respectively. We showed, both qualitatively and quantitatively, that the style and content are indeed disentangled in the latent space. This disentangled latent representation learning can be applied to style transfer on non-parallel corpora. We achieved high performance in terms of transfer accuracy, content preservation, and language fluency, in comparison to various previous approaches. In our related work we extended this approach and applied it to disentangling representations of syntax and semantics, enabling such applications as paraphrase generation and syntax transfer.</p>
11:50 am – 1:00 pm	Lunch
1:00 pm – 1:30 pm	Lin Gao, Manulife • E7-2317

<i>Time</i>	<i>Event</i>
	<p><i>Graph Analytics in Manulife</i></p> <p>Graph analytics has been powering social media platforms, search engines and many more applications we use day-to-day. In this talk, Lin Gao will introduce a few use cases of Graph Analytics in Manulife including anti-fraud, entity resolution and more.</p>
1:20 pm – 2:10 pm	<p>Panel on AI and Finance • E7-2317</p> <p>Moderator:</p> <ul style="list-style-type: none"> • Cindy Forbes, Manulife <p>Panelists:</p> <ul style="list-style-type: none"> • Dave Keirstead, Manulife • Eugene Wen, Manulife • Yuying Li, David R. Cheriton School of Computer Science, University of Waterloo • Tony Wirjanto, Department of Statistics and Actuarial Science, University of Waterloo
2:10 pm – 2:15 pm	<p>Wrap-up and Closing • E7-2317</p>

Biographies

<i>Speaker</i>	<i>Biography</i>
Cindy Forbes, Manulife	<p>Cindy Forbes is Manulife’s Interim Chief Marketing Officer. She has spent over 35 years with Manulife, developing a deep understanding of all the Company’s significant product lines. She has held senior finance roles in the company’s Asian operations as well as Reinsurance, Investment and U.S. divisions, and most recently was Chief Analytics Officer where she built the function that yields a strong value for Manulife businesses across all markets. Cindy assumed her first executive role at Manulife in 1991 as Vice President and CFO of the Company’s U.S. Group and Pensions business. Following that she held</p>

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	<p>multiple executive roles in increasing scope until 2004 when she moved to Japan to become SVP and Chief Financial Officer, acting as the chief actuary and chief risk officer for Manulife Japan. Less than two years later she assumed responsibility for the financial functions of the entire Asia region, based in Hong Kong. In June of 2010, Cindy began her tenure as Manulife’s Chief Actuary until April 2016 when she moved into the newly created Chief Analytics Officer position.</p> <p>Cindy holds an Honours Bachelor of Mathematics degree from the University of Waterloo, Canada. She is a Fellow of the Society of Actuaries and a Fellow of the Canadian Institute of Actuaries and she is the current Chairperson of the Board of Governors at University of Waterloo.</p>
Dave Keirstead, Manulife	<p>Dave Keirstead is the Vice-President, Advanced Analytics for Manulife’s Canadian segment. He leads a team of data scientists and data science engineers who are responsible for delivering and deploying advanced analytics/machine-learning solutions and insights to improve the effectiveness of programs and processes across Manulife’s many businesses. He has 19 years of experience leading a wide variety of data and analytics projects in both the public and private sector.</p>
Lin Gao, Manulife	<p>Lin Gao obtained a PhD in Aerospace Engineering from the University of Toronto. After completing his PhD, he joined Manulife as data scientist in Group Advanced analytics. He focuses on developing models and insights to help protect Manulife’s customers from financial fraud. His most recent work encompasses using Graph Analytics to identify crime rings in vast amounts of data.</p>
Eugene Wen, Manulife	<p>Eugene Wen is the Vice President for Group Advanced Analytics at Manulife Financial. He leads data scientist teams in supporting corporate functions, creates governance and policy frameworks for analytics, and establish research and development (R&D) capabilities in advanced analytics to support businesses across the company. Eugene is passionate about using data and analysis to support strategic and operational decision-making. He spends substantial time in recruiting and developing advanced analytics talents. Prior to his current position at the Manulife Financial, Eugene served as the Vice President and Chief Statistician at the Workplace Safety & Insurance Board (WSIB) of Ontario. He obtained his DrPH (Doctor of Public Health) from School of Public Health, University of Texas.</p>
Yaoliang Yu, UW	<p>Yaoliang Yu is currently an assistant professor in the David R. Cheriton School of Computer Science at University of Waterloo. He obtained his PhD from the computing science department of University of Alberta in 2013, and he spent two wonderful postdoctoral years at CMU. His main research interests include robust methods, convex and nonconvex</p>

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	<p>optimization, generative modeling, distributed system, and applications in computer vision, genetics, finance, and multimedia.</p>
<p>Olga Vechtomova, UW</p>	<p>Olga Vechtomova is an associate professor in the Department of Management Sciences, Faculty of Engineering, cross-appointed in the School of Computer Science at the University of Waterloo. Olga leads the Natural Language Processing Lab, affiliated with the Waterloo.AI Institute. Her research has been supported by a number of industry and government grants, including Amazon Research Award and Natural Sciences and Engineering Research Council (NSERC). The research in her Lab is mainly focused on designing deep neural networks for natural language generation tasks. Her current and recent projects include controlled text generation, text style transfer, and designing text generative models for creative applications. She has over 50 publications in NLP and Information Retrieval conferences and journals, including NAACL-HLT, COLING, ACL, ACM SIGIR, and CIKM. She and her colleagues recently received the ACM SIGIR 2019 Test of Time Award.</p>
<p>Yuying Li, UW</p>	<p>Yuying Li is a professor in the Cheriton School of Computer Science at the University of Waterloo. Prior to joining UW, she was a senior research associate at Cornell University 1988-2005. She is also the recipient of the 1993 Leslie Fox first Prize in numerical analysis held at Oxford England. Her research interests include financial data science, machine learning, and computational optimization. Li is currently an associate editor for Journal of Computational Finance, as well as Journal of Finance and Data Science.</p>
<p>Tony Wirjanto, UW</p>	<p>Tony Wirjanto is a Professor with Department of Statistics and Actuarial Science of the Faculty of Mathematics as well as the School of Accounting and Finance of the Faculty of Arts, both at the University of Waterloo. His research focuses on (i) computational statistics with financial time-series applications, and (ii) financial mathematics. For the former, his most recent research has focused on functional time-series theory with applications to ultra-high frequency financial data. For the latter, his most recent research has focused on portfolio optimization in high-dimensional setting, and on applications of machine learning and deep learning techniques to constructed portfolios. He is currently a member of Waterloo Artificial Intelligence Institute (Waterloo.ai) and Centre for Computational Mathematics in Industry and Commerce. He is also currently a participating member of Machine Learning in Quantitative Finance and Business Analytics.</p>