

Fletcher Lu, PhD

Assistant Professor, Faculty of Business and Information Technology and Faculty of Health Sciences at University of Ontario Institute of Technology

Oshawa, ON, CA

World-renowned fraud detection expert advances fraud auditing and health informatics

An internationally recognized fraud detection expert, Fletcher Lu, PhD, has helped solve one of Canada's largest cases of insurance fraud. An Assistant Professor cross-appointed in the Faculty of Business and Information Technology and the Faculty of Health Sciences, Dr. Lu has made significant advances in the fields of fraud auditing and health informatics.

He joined UOIT in 2008 while serving as a research consultant with the Government of Canada's Department of National Defence. Previously, he was an assistant professor in the Department of Math & Computer Science at the University of Maryland Eastern Shore. His fascination with insurance fraud grew out of his Postdoctoral Research at the Canadian Institute of Chartered Accountants and Waterloo Institutes of Health Informatics Research at the University of Waterloo.

Since fraud by nature is intricately hidden, Dr. Lu is intrigued by the detective game of understanding complex algorithms and uncovering patterns in a constantly changing world. By applying his theoretical techniques to company data, he discovered a major Canadian insurance fraud, and recovered millions of dollars in the finance sector.

Dr. Lu's research crosses several disciplines, including health informatics, computer science, gaming, fraud detection and security. His current research involves applying machine learning and numerical analysis techniques to understand complex fraud patterns in health insurance data; and improving youth fitness with mobile technology applications.

Education/Learning, Computer Gaming, Computer/Network Security, Information Technology and Services, Research, Insurance

Fraud Auditing, Health Informatics, Insurance, Machine Learning, Scientific Computing, Mobile Fitness

Institute of Electrical and Electronic Engineers, American Medical Informatics Association, American Mathematical Society, Institute for Operations Research Management Sciences

An Automated Fraud Auditing System with Health Insurance Records

Institute for Operations Research Management Sciences Annual Meeting

Datamining: Developing a Fraud Audit Support System

Canadian Health Care Anti-Fraud Association Annual Conference

Combating Childhood Obesity by Mobile Fitness Gaming

Chronic Disease Prevention Alliance of Canada 4th Pan Canadian Conference

University of Waterloo
PhD Statistical Machine Learning

University of Waterloo
MMath Scientific Computation

University of Waterloo
BMath Mathematics

Canadian Operations Research Society (CORS) Practice Prize Winner

Dr. Lu received first prize at the 2014 CORS Practice Prize Competition for outstanding operational research in Computational Efficiencies in Insurance Fraud Data Analysis.

Institute for Operations Research and the Management Sciences (INFORMS) Honours

Dr. Lu received distinction at the 2013 INFORMS Annual General Meeting for the results of his research in insurance fraud risk using Markov decision processes.

Lakeridge Health Research Ethics Board

Since 2010, Dr. Lu has served on the Research Ethics Board for Lakeridge Health Corporation. He is responsible for the review of research involving human subjects for compliance with provincial and national standards; as well as monitoring ongoing research within the Oshawa hospital for subject treatment and ensuring informed consent.

Assistant Professor, Cross-Appointed in the Faculty of Business and Information Technology, and the Faculty of Health Sciences, UOIT

Dr. Lu teaches undergraduate and graduate courses in Artificial Intelligence, Systems Analysis in Health Care, and Advanced Data Structures and Algorithms. His research has been supported by the National Science Foundation, the Natural Sciences and Engineering Research Council of Canada and the Ontario Partnership for Innovation and Commercialization.

Executive Member and Reviewer, International Association of Journals and Conferences (IAJC)

Since 2008, Dr. Lu has been an executive member of IAJC, a first-of-its-kind, global, umbrella consortium for academic journals, conferences, organizations, and individuals committed to advancing excellence in all aspects of technology-related education. Dr. Lu reviews submitted research papers and serves as chair for conference sessions.

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