

# Fields-Western Summer School on Topological Data Analysis for Banking and Finance

Monday Jul 16 to Friday Jul 27 2018

The new School of Mathematical & Statistical Sciences at Western University, in cooperation with the Fields Institute for Research in the Mathematical Sciences, is delighted to announce the Summer School on Topological Data Analysis for Banking and Finance. This school will be held at Western University's beautiful London Ontario campus.

Topological Data Analysis employs a variety of tools and techniques from algebraic and computational topology to probe the structure of relationships in datasets. Modern Finance and Banking involves a great deal of complicated data. Such data is pervasive in the modern financial world. It arises in the setting of financial market prices in the "order book". It arises from the way in which attributes recorded from prospective borrowers are used to decide whether to grant loans and on what terms. It also arises in the complicated integration of spatio-temporal data from various bank customers to decide if, for instance, a credit card is being used by its owner or by a thief.

The first week of the school comprises three inter-related short courses covering the fundamentals of topological data analysis, taught from an application-oriented perspective rather than with full mathematical rigor; describing the type of data available to banking and financial analysis, and providing a short course in programming tools. The second week of the workshop will include exploration of real or realistic data sets, in teams, with a view to applying the concepts learned in the first week.

The workshop is designed to be accessible to participants with a mathematics background corresponding to a third year undergraduate exposure to mathematical fundamentals and some exposure to the basics of programming as obtained, for example, in a first university course in computer science. No explicit background in finance or banking is required or assumed.

Registration is available at [http://www.fields.utoronto.ca/activities/18-19/topological\\_data\\_analysis](http://www.fields.utoronto.ca/activities/18-19/topological_data_analysis)

Registration includes a light breakfast and lunch each week day.

	Early bird (before May 15 2018)	Full cost
Student	\$175	\$200
Postdoc	\$250	\$300
Faculty/Practitioner	\$350	\$400

Students attending from outside of London will be accommodated at London Hall <http://www.stayatwestern.ca/> at no additional cost, while faculty and other guests are encouraged to take advantage of London Hall accommodations. (not included) at a cost of about \$75 per night or off campus hotel opportunities.

School Lecturers: Dan Christensen, Matt Davison, and Rick Jardine

Organizing Committee: Matt Davison (Stats; Western), Rick Jardine (Math; Western), Mark Daley (CS; Western), Gunnar Carlsson (Stanford)