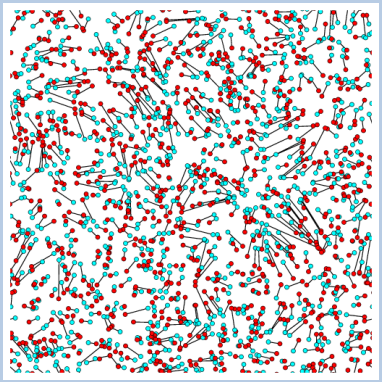
PIMS DISTINGUISHED SPEAKER

Alexander E. Holroyd
Microsoft Research
Redmond, Washington

Random Matching

Tuesday, Mar 19th at 3:30 pm

Location: University of Victoria
MacLaurin, D116



Abstact:
Suppose that infinitely many red and blue points occur at random locations in Euclidean space, and consider translation-invariant schemes for perfectly matching red points to blue points. (Translation-invariance can be interpreted as meaning that the matching is constructed without favouring one spatial location over another.) What is the best possible cost of such a matching, measured in terms of the edge lengths? What happens if we insist that the matching is constructed without extra randomness, or if we forbid edge crossings, or if the points act as selfish agents? This last restriction can be formalized via the concept of stable marriage, the topic of the 2012 Nobel Prize in Economics.

I will review recent progress and open problems on these questions, as well as variants including fair allocation, multi-colour matching and multi-edge matching.

Alexander Holroyd received his Ph.D. from the University of Cambridge in 2000. After post-doctoral positions at UCLA and Berkeley, he became a faculty member at UBC. Holroyd won the Rollo Davidson prize (awarded to an outstanding young probabilist) and the Andre-Aisenstadt Prize (for an outstanding young mathematician in Canada). In 2010, he moved to the Theory Group at Microsoft Research in Redmond, Washington.

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