

GEOMETRIC ANALYSIS SEMINAR

“A PDE Approach to Prediction with Expert Advice”

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Abstract: In the machine learning literature one approach to prediction assumes the existence of two or more 'experts'; the best prediction in this setting is one that 'minimizes regret', i.e. tries to perform as close as possible to the best-performing expert. This talk focuses on a model problem of the prediction of a binary sequence (or a stock whose price goes up or down one unit every time step) in the case of two time-dependent experts with publicly available algorithms. I will discuss a continuum limit in which the optimal prediction is an approximation algorithm to the original problem. The optimal prediction in the limit is a solution to a second order parabolic PDE, with surprising connections to motion by curvature. This is joint work with Robert Kohn.

Wednesday, March 8th, 2017
MIT, Room 2-131
Time: 4:00 PM

