



The University of Chicago  
Department of Statistics

Seminar Series

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Caltech

**Non-Commutative Harmonic Analysis  
in Machine Learning**

**FRIDAY, January 28, 2011, at 12:00 PM**

110 Eckhart Hall, 5734 S. University Avenue

**ABSTRACT**

Non-commutative harmonic analysis generalizes the notion of Fourier transformation to rotations, permutations, or, in general, any compact group acting on our data. We have found that this theory and the corresponding fast Fourier transforms have a whole range of natural applications in machine learning and other areas of computer science. I will give an overview of these developments, touching on invariant features for computer vision, compact representations of uncertainty in multi-object tracking, graph kernels, and strategies for solving hard optimization problems.

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For further information and about building access for persons with disabilities, please contact Laura Rigazzi at 773.702.8333 or send email ([lrigazzi@galton.uchicago.edu](mailto:lrigazzi@galton.uchicago.edu)). If you wish to subscribe to our email list, please visit the following web site: <https://lists.uchicago.edu/web/info/statseminars>.