



THE UNIVERSITY OF CHICAGO

Department of Statistics

SCIENTIFIC AND STATISTICAL COMPUTING SEMINAR

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Institute for Mathematics and its Applications
University of Minnesota

The Mathematics of Bar Code Scanning

THURSDAY, January 15, 2015 at 4:30 PM
133 Eckhart Hall, 5734 S. University Avenue

ABSTRACT

I will present what I hope is a fun and informative exploration into bar code scanning. Bar codes are ubiquitous -- they are used to identify products in stores, parts in a warehouse, and books in a library, etc. In this talk, I will describe how information is encoded in a bar code and how it is read by a scanner. The presentation will go over how the decoding process, from scanner signal to coded information, can be formulated as an inverse problem. The inverse problem involves finding the "word" hidden in the signal. What makes this inverse problem, and the approach to solve it, somewhat unusual is that the unknown has a finite number of states.

Organizers:

Lek-Heng Lim, Department of Statistics, lekheng@galton.uchicago.edu, Ridgway Scott, Departments of Computer Science and Mathematics, ridg@cs.uchicago.edu, Jonathan Weare, Department of Statistics and The James Franck Institute, weare@uchicago.edu. SSC Seminar URL: http://www.stat.uchicago.edu/seminars/SSC_seminars.shtml.

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