



# THE UNIVERSITY OF CHICAGO

Departments of Mathematics and Statistics  
**ALGEBRAIC GEOMETRY SEMINAR**

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## **JASON MORTON**

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## **Geometry and Tensor Networks**

**TUESDAY, April 9, 2013, from 4:30–6:00 PM**  
202 Eckhart Hall, 5734 S. University Avenue

## **ABSTRACT**

Geometry and tensor networks: Tensor networks (or more generally, diagrams in monoidal categories with various additional properties) arise constantly in applications, particularly those involving networks used to process information in some way. Aided by the easy interpretation of the graphical language, they have played an important role in computer science, statistics and machine learning, and quantum information and many-body systems. Tools from algebraic geometry, representation theory, and category theory have recently been applied to problems arising from such networks. Basic questions about each type of information-processing system (such as what probability distributions or quantum states can be represented) turn out to lead to interesting problems in algebraic geometry, representation theory, and category theory.

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### **Organizers:**

For further information on this event, please email Lek-Heng Lim at [lekheng@galton.uchicago.edu](mailto:lekheng@galton.uchicago.edu) or Madhav Nori at [nori@math.uchicago.edu](mailto:nori@math.uchicago.edu).

UCAGS Seminar URL: <http://www.stat.uchicago.edu/~lekheng/ag.html>