Mathematics, Statistics, and Computer Science   **@ UIC**

Special Colloquium

Mathematics of Deep Neural Networks

Boris Hanin (Texas A&M)

Abstract: Neural networks are remarkable families of non-linear functions that form the backbone for state-of-the-art algorithms in tasks from computer vision (self-driving cars), natural language processing (Google Translate) and reinforcement learning (AlphaGo). After giving a precise definition of what neural networks are, I will explain how important practical questions about their complexity, stability, and optimization can be recast in mathematical terms using objects ranging from hyperplane arrangements to random matrices. Most of these probabilistic questions are new, and I will touch on work I've done to start answering them.

Friday, December 6 at 3:00 PM in 636 SEO