מכון ויצמן למדע

THE WEIZMANN INSTITUTE OF SCIENCE

FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Geometric Functional Analysis and Probability Seminar

Room 155 ,Ziskind Building
on Thursday, Feb 07, 2019
at 13:30

Tsviqa Lakrec
HUJI

Scenery Reconstruction for a Random Walk on Random Scenery with Adversarial Error Insertion

Abstract:

Consider a simple random walk on $\mathbb{Z}$ with a random coloring of $\mathbb{Z}$. Look at the sequence of the first N steps taken and colors of the visited locations. From it, you can deduce the coloring of approximately $\sqrt{N}$ integers. Suppose an adversary may change δN entries in that sequence. What can be deduced now? We show that for any $\theta<0.5,p>0$, there are N_{0},δ_{0} such that if $N>N_{0}$ and $\delta<\delta_{0}$ then with probability $>1-p$ we can reconstruct the coloring of $>N^{\theta}$ integers.

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