

Discrete Convexity in Probability, Tools and Applications

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The theory of convexity plays an important role in many areas of probability. In this talk, I will discuss an optimization-type technique involving discrete convexity, focusing in particular on the important sub class of discrete log-concave measures in the one-dimensional setting. This technique can be used, for example, to prove concentration, small deviation and entropy inequalities for certain classes of discrete random variables. I will conclude my talk with a brief introduction to discrete convexity in higher dimensions.

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