

Inn'formal Probability Seminar

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“An invitation to categorical probability”

Abstract

Probability theory and statistics are usually developed based on Kolmogorov's definition of probability space as a foundation. In this talk, I will present an alternative foundation that is currently under development, and I will argue that it improves over the traditional one in various respects. This approach is formulated in terms of category theory, and it makes Markov kernels instead of probability spaces into the fundamental primitives. Its abstract nature also implies that no measure theory is needed. After introducing the approach itself, I will sketch our proof of the de Finetti theorem in terms of it and summarize some ongoing developments in the direction of ergodic theory.

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SR 609 | civil engineer building