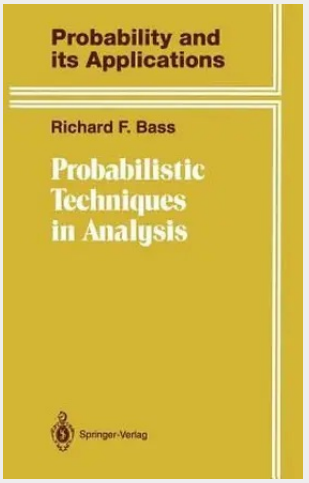
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Probabilistic Techniques in Analysis



In recent years, there has been an upsurge of interest in using techniques drawn from probability to tackle problems in analysis. These applications arise in subjects such as potential theory, harmonic analysis, singular integrals, and the study of analytic functions. This book presents a modern survey of these methods at the level of a beginning Ph.D. student. Highlights of this book include the construction of the Martin boundary, probabilistic proofs of the boundary Harnack principle, Dahlberg's theorem, a probabilistic proof of Riesz' theorem on the Hilbert transform, and Makarov's theorems on the support of harmonic measure.
The author assumes that a reader has some background in basic real analysis, but the book includes proofs of all the results from probability theory and advanced analysis required. Each chapter concludes with exercises ranging from the routine to the difficult. In addition, there are included discussions of open problems and further avenues of research.

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