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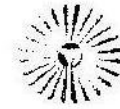
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Notes Due to Discrete Normal and Discrete Laplace Distributions *

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Abstract

We consider the class of discrete distributions supported on the set of integers $\{0, 1, 2, \dots\}$ and specified properties of them, especially discrete normal and discrete Laplace distributions. A discrete version of normal distribution is characterized via the solution of Cauchy type equation on discrete domain in view of DasGupta (1993). Discrete analogue of the normal distribution is characterized by maximum entropy when specified mean and variance on integer support on \mathbb{R} . Following Kemp (1997), this distribution is characterized by the difference of two Iliev distributions. Bilateral power series distributions has maximum entropy when the k^{th} factorial moment and mean are prescribed, the special case for $k = 2$ is discrete normal.

It will be shown that under such parameterization, uniformly for all sufficiently large variances and all expectations, discrete normal and their two moments are given in very simple formula in view of the continuous case. we are going to derive several properties of discrete normal distributions via reparameterization. Approximating some moments for sum of two independent discrete normal distributions and noting on these distributions retains many of the nice features of the continuous normal distribution.

Some results and characterizations for this model, related to reliability measure (hazard rate, residual life, truncated mean), Fisher information, analogue of Fisher information, information measures, Jacobi series, common properties (for normal, discrete normal and Poisson distributions), results due to statistical aspects and some numerical calculations that also discussed here, lead us to another direction of this paper.

Discrete version of the Laplace distribution and properties like, unimodality, infinite divisibility, closure properties w.r.t. geometric distribution, reliability measures, maximum entropy and information measures and finding analogue of properties of continuous Laplace distributions are derived.

Finding the values of $P\{X > Y\}$ regarding two independent random variables X and Y related to these two discrete distributions is another useful measure that is studied at the end of this paper.

*The full paper of this note is published. It will present in seminar only and it can not be published again.



آمار چیست

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چکیده

ظرفی فایل آماده شده که در محیط Adobe Flash ۷ و یا Internet Explorer قابلیت اجرا را دارد، مفاهیمی از زیبایی‌های علم آمار ارائه می‌گردد.

برآورد بیزی بازگشتی در مدل‌های خطی عمومی

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چکیده

در این مقاله، برآورد بیزی بازگشتی در مدل خطی عمومی و الگوریتم آن و برآورد بیزی بازگشتی وزنی در مدل خطی عمومی و الگوریتم آن ارائه شده است. واژه‌های کلیدی: الگوریتم، برآورد بیزی بازگشتی وزنی، مدل خطی.