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PEINS: A Generic Compression Scheme Using Probabilistic Encoding and Irrational Number Storage

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Abstract : With social networks and smart devices generating a multitude of data, effective data management is the need of the hour for networks and cloud applications. Some applications need effective storage while some other applications need effective communication over networks and data reduction comes as a handy solution to meet out both requirements. Most of the data compression techniques are based on data statistics and may result in either lossy or lossless data reductions. Though lossy reductions produce better compression ratios compared to lossless methods, many applications require data accuracy and miniature details to be preserved. A variety of data compression algorithms does exist in the literature for different forms of data like text, image, and multimedia data. In the proposed work, a generic progressive compression algorithm, based on probabilistic encoding, called PEINS is projected as an enhancement over irrational number stored coding technique to cater to storage issues of increasing data volumes as a cost effective solution, which also offers data security as a secondary outcome to some extent. The proposed work reveals cost effectiveness in terms of better compression ratio with no deterioration in compression time.

Keywords : compression ratio, generic compression, irrational number storage, probabilistic encoding
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