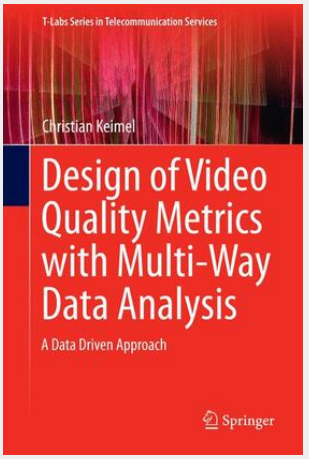
Keimel

Design of Video Quality Metrics with Multi-Way Data Analysis

A data driven approach



This book proposes a data-driven methodology using multi-way data analysis for the design of video-quality metrics. It also enables video- quality metrics to be created using arbitrary features. This data- driven design approach not only requires no detailed knowledge of the human visual system, but also allows a proper consideration of the temporal nature of video using a three-way prediction model, corresponding to the three-way structure of video. Using two simple example metrics, the author demonstrates not only that this purely data- driven approach outperforms state-of-the-art video-quality metrics, which are often optimized for specific properties of the human visual system, but also that multi-way data analysis methods outperform the combination of two-way data analysis methods and temporal pooling.

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