

Preface

Video signal processing and *chemistry* are at first glance very different domains. Yet in both domains similar problems are encountered when not directly measurable quantities need to be measured. Each domain developed methods to address this issue: in chemistry, *chemometrics* aims at describing not directly measurable properties in chemical systems, whereas in video signal processing, *video quality metrics* aims at providing the similarly unmeasurable quality of distorted video signals.

Unlike in the design of video quality metrics, a data driven approach to the design of prediction models for quality assessment is well established in chemometrics. In this book, the lessons learned and methods developed from chemometrics are therefore applied to the design of video quality metrics. It provides the reader with both an understanding of the fundamental data driven approach and associated methods from chemometrics, and its extension and application to the design of video quality metrics. The main focus is on how to build prediction models for data with a multi-way structure, as in the case of video.

The target audience of this book are researchers in the (audio-visual) signal processing community in general and the video quality assessment community in particular, but also researchers in other disciplines who work with multi-way data and who are interested in the advantages of handling multi-way data directly, instead of representing data as matrices as is mostly done so far in many domains.

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Analysis

A data driven approach

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