Book Review

Probabilistic and Biologically Inspired Feature Representations
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Computer Vision has undergone and undergoing rapid changes in the light of newer sub-domain relations and developments. The themes such as deep learning, deep networks, big data and other developments have good impact on the field visual information representation.

Realizing the value and potential of it the author has brought out the book on *Probabilistic and Biologically Inspired Feature Representations.*

It has 7 chapters, whereas the book begins the description of some fundamentals in the introduction. The feature extraction in the computer vision has changed significantly in the last few years due to the effect of the infliction of the subjects such as physics, engineering, neuro and cognitive sciences. The first chapter is mainly concerned with the characteristics of feature extraction.

The terminologies and concepts to the computer vision forms the second chapter of the book. To gain a good understanding of the concepts the statistical properties, sparse representations, histograms and signatures and also their links to biologically inspired models are discussed. Author viewed that the channel representations of the feature vision is inspired from biology. In the next chapter on Channel Coding of Features, the methods of coding, feature dimension with one feature and with several features are represented. Thus, the channel coding of feature representation is related with population coding in the current chapter.

The channel coded feature maps is introduced in the next chapter with the extension of the methods for channel coding of features. Further the specific feature representations such as SIFT and HOG and SHOT are expressed in terms of CCFMs in the chapter on Channel-coded Feature Maps.

In the fifth chapter on CCFM Decoding and Visualization, the decoding issues are addressed. In the past till the current period how the channel decoding was carried out is the central issue treated in this chapter. The decoding for various kernels, decoding based on frame theory, the maximum entropy decoding, and the relations to the other decoding methods are widely discussed in this chapter. In the sixth chapter on Probabilistic Interpretation of Channel Representations, how the channel representation was represented and how it is undergoing changes are the central discussions in this unit. Thus, various channel representations based on probabilistic interpretation are compared and a wider discussion is presented.

This book provide a synthesis on channel representations published in many works. The reading of this book is definitely leads to gain understanding of the possible applications in the areas such as deep learning, visual representations etc. Further the scope of the channel representation is well treated with supporting literature.

This book is supplemented with a lengthy bibliography.

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