

Preface

Patterns are ubiquitous in almost any kind of data. Finding patterns is of great importance and interest to data analytics. This book presents visual pattern discovery for visual data analytics. It provides a systematic study of visual pattern discovery and recognition, from unsupervised to semi-supervised manner approaches, and from dealing with single feature to multiple types of features. We start with a brief overview of visual pattern discovery, then move on to specific approaches. Chapters 2 and 3 focus on discovering spatial context-aware visual co-occurrence patterns incorporating single or multiple types of features. Chapter 4 studies the visual pattern discovery problem given a small amount of labeled data to enable visual categorization and recognition through label propagation based on similar feature co-occurrence patterns. Chapter 5 introduces a multi-feature pattern embedding method for visual data clustering using only the multiple feature evidences. Chapter 6 finally concludes this book, discusses potential visual search and recognition applications of discovering visual patterns, and suggests worthy directions for further research.

This is a reference book for advanced undergraduates or postgraduate students who are interested in visual data analytics. Readers of this book will be able to quickly access the research front and acquire a systematic methodology rather than a few isolated techniques to analyze visual data with large variations. It may be also inspiring for researchers working in computer vision and pattern recognition fields. Basic knowledge of linear algebra, computer vision, and pattern recognition would be helpful to read this book.

Chongqing, China
Singapore, Singapore
Singapore, Singapore
April 2017

Hongxing Wang
Chaoqun Weng
Junsong Yuan

Visual Pattern Discovery and Recognition

Wang, H.; Weng, C.; Yuan, J.

2017, X, 87 p. 33 illus., 9 illus. in color., Softcover

ISBN: 978-981-10-4839-5