# Preface

The intended audience of this book is threefold. We wrote it as a textbook on discrete differential geometry and integrable systems. A one semester graduate course in discrete differential geometry based on this book was held at TU Berlin and TU München several times. At the end of each chapter we included numerous exercises which we recommend for the classes. For some of them (marked with asterisks) solutions are supplied. The standard undergraduate background, i.e., calculus and linear algebra, is required. In particular, no knowledge of differential geometry is expected, although some familiarity with curves and surfaces can be helpful.

On the other hand, this book is also written for specialists in geometry and mathematical physics. It is the first monograph on discrete differential geometry which reflects the progress in this field during the last decade, and it contains many original results. The bibliographical notes at the end of each chapter are intended to provide the reader with an overview of the relevant research literature.

The third group at which this book is targeted are specialists in geometry processing, computer graphics, architectural design, numerical simulations and animation. There is a growing evidence of the importance of intelligent geometric discretizations in these fields. Talking with researchers in these fields, we were asked many questions regarding the discretization of differential geometry. We hope to have answered some of them in this book.

All the readers are encouraged to read or at least to skim the Introduction (some parts of it assume a broader knowledge than the minimum) to see the words and pictures and to get a sense of how the ideas fit together and what does the book cover.