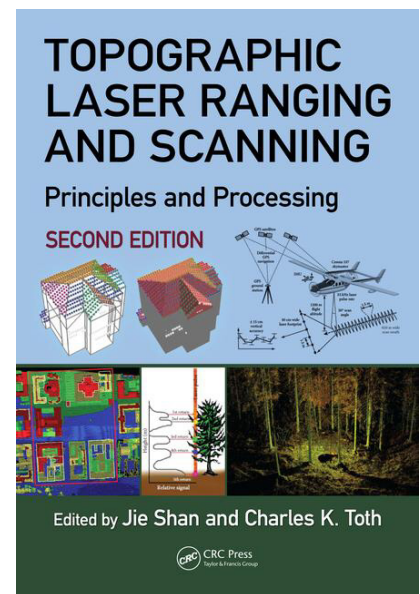This is the second edition of a major textbook on lidar, covering the hardware, software and applications of terrestrial, mobile, airborne and spaceborne systems in depth. The editors are well known, highly respected academics from Purdue University (Shan) and The Ohio State University (Toth), who have presided over 32 talented contributors, drawn from industry, government and academia in multiple countries. The publisher enumerated the success of the first edition in support of its decision to go for a second: "With over 1900 hardback copies sold worldwide and thousands of subscriptions' downloads, the first edition reached students and professionals in [multiple] fields." Further motivation was the desire to include developments since the first edition, especially UAV-borne and commercial versions of single-photon and Geiger-mode systems, as well as software developments, some of which grew from deeper involvement in lidar of the remote sensing and computer vision communities.

The book begins with an introduction to laser ranging, followed by two hefty chapters covering hardware aspects of terrestrial, mobile, airborne and spaceborne systems. The fastidiousness with which the information has been collected and taxonomies developed to put the systems in perspective for the reader is apparent. Nevertheless, the stream of short sections describing systems produced, to around the end of 2016, could perhaps have been supplemented by graphics showing how some of the main system parameters have evolved. Chapter 4, lidar systems and calibration, explains full systems and the issues involved with registration and calibration. Chapter 5-7 are theoretical treatments of: pulsed laser ranging techniques, including signal strength, waveform digitization, discrete returns and photon counting; the georeferencing component; and full-waveform analysis. Chapter12, forest inventory, is applications-oriented. Chapter 13 is an important discussion of the integration of lidar and photogrammetric data, focusing on triangulation and orthorectification. Chapter 14, feature extraction in urban areas, begins a long section on city applications, with five further chapters on: global solutions to building segmentation and reconstruction; building and road extraction; progressive modeling of 3D rooftops; automated construction of building models; and quality of extracted building models.

Users of the first edition may be interested specifically in the updates. The first three chapters have been subject to a thorough revision, to include the many new developments and the technological changes on which they depend. Chapters 7, 8, 10 and 17 have undergone significant overhauls and extensions. Chapter 15 a complete replacement of the one in the first edition. There are further updates throughout most of the book, though the preface points out that chapters 5, 6 and 14 are primarily theoretical and have not required revision. As a result, the page count has increased by 48.

Topographic Laser Ranging and Scanning: Principles and Processing is well produced, with clear text and well chosen, informative illustrations. The chapters have been written by experts in their fields, so not only are there overlaps, but the authors' emphases necessarily reflect their research foci. These are hardly demerits, given the underlying didactic purpose. There are copious references at the end of every chapter and a useful, 15-page index. The book is expensive, however, as is typical for textbooks aimed at small markets. Nevertheless, teachers, students and practitioners should certainly have it on their shelves or demand it from their libraries. There are useful complementary works, especially the recently arrived third edition of *Digital Elevation Model Technologies and Applications: The DEM Users Manual* from ASPRS, which also offers the *Airborne Topographic Lidar Manual*. There are less weighty works too. The second edition of Shan and Toth, however, is a *magnum opus*, which will deservedly serve as readers' primary source for the knowledge essential to be effective in the increasingly important and fast-changing world of lidar.

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