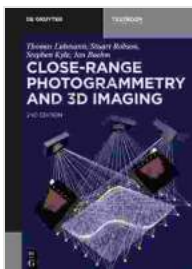


# Close Range Photogrammetry and 3D Imaging: A Comprehensive Guide to Capturing and Processing Real-World Data

Close range photogrammetry and 3D imaging are powerful techniques that allow us to create accurate and realistic 3D models of objects and environments. These techniques are used in a wide variety of applications, including:



## Close-Range Photogrammetry and 3D Imaging (De Gruyter Textbook) by Stuart Robson

★★★★☆ 4.7 out of 5

Language : English

File size : 39966 KB

Screen Reader : Supported

Print length : 702 pages



- Architecture and engineering
- Manufacturing and quality control
- Cultural heritage and archaeology
- Medicine and healthcare
- Forensics and criminal investigation

This comprehensive textbook provides a detailed overview of close range photogrammetry and 3D imaging techniques, with a focus on practical

applications and case studies. The book covers all aspects of these techniques, from data acquisition and processing to model creation and visualization.

## **Data Acquisition**

The first step in close range photogrammetry is to acquire data about the object or environment being modeled. This data can be acquired using a variety of techniques, including:

- Photography
- Videography
- Laser scanning
- Structured light scanning

The choice of data acquisition technique depends on the specific application and the desired level of accuracy.

## **Data Processing**

Once data has been acquired, it must be processed to extract the 3D information. This process typically involves the following steps:

- Image alignment
- Point cloud generation
- Mesh generation
- Texture mapping

Each of these steps is critical to producing a high-quality 3D model.

## **Model Creation and Visualization**

Once the data has been processed, a 3D model can be created. A variety of software programs can be used to create 3D models, including:

- AutoCAD
- Blender
- Maya
- SolidWorks

The choice of software program depends on the specific application and the desired level of realism.

## **Applications**

Close range photogrammetry and 3D imaging have a wide range of applications, including:

- Architecture and engineering
- Manufacturing and quality control
- Cultural heritage and archaeology
- Medicine and healthcare
- Forensics and criminal investigation

These techniques can be used to create accurate and realistic 3D models of a variety of objects and environments, which can be used for a variety of purposes.

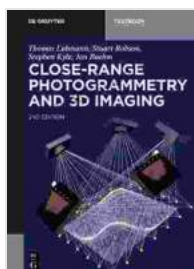
## Case Studies

The book includes a number of case studies that illustrate the practical applications of close range photogrammetry and 3D imaging. These case studies include:

- A study of the Notre Dame Cathedral after the fire
- A study of the Great Sphinx of Giza
- A study of the human heart
- A study of a crime scene

These case studies provide valuable insights into the real-world applications of these techniques.

Close range photogrammetry and 3D imaging are powerful techniques that allow us to create accurate and realistic 3D models of objects and environments. These techniques have a wide range of applications, from architecture and engineering to medicine and healthcare. This comprehensive textbook provides a detailed overview of these techniques, with a focus on practical applications and case studies. This book is an essential resource for anyone interested in learning more about close range photogrammetry and 3D imaging.



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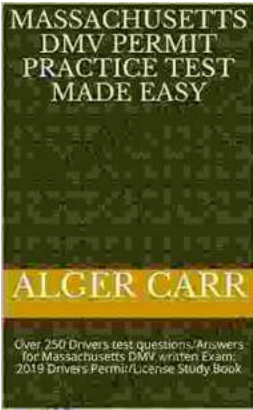
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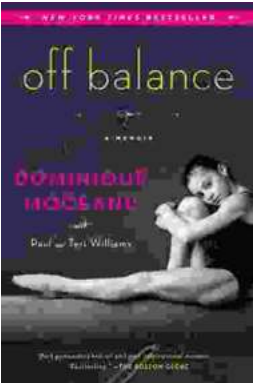
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