



Special Issue Reprint

New Tools or Trends for Large-Scale Mapping and 3D Modelling

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Topographic surveys are used to capture the shape of the world and represent it as a topographic map or three-dimensional (3D) model. Large-scale topographic maps are essential for (a) the design and construction of infrastructure in an urban environment, (b) 3D/city modeling, and (c) general-purpose mapping. Topographic surveys are normally carried out with traditional surveying, photogrammetry, LiDAR/laser scanning, unmanned aerial vehicles (UAVs), and satellite remote sensing. Remote sensing tools have shown their efficacy in exploring natural, human, and social systems at unprecedented resolutions. These tools have been used for acquiring the spatial data needed for mapping since the early 1970s, because they are rapid, cost-effective, and reliable. Now, the demand for geospatial data has increased exponentially, coupled with the need for high-quality large-scale maps and 3D models. The recent developments in remote sensing cameras have opened the door for the high-quality and large-scale mapping of our environment, 3D/city modeling, and many useful applications, such as infrastructure monitoring, crack measurement, etc. These include depth (stereo) cameras, fine-resolution satellite sensors, and state-of-the-art cameras for terrestrial photogrammetric applications.



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