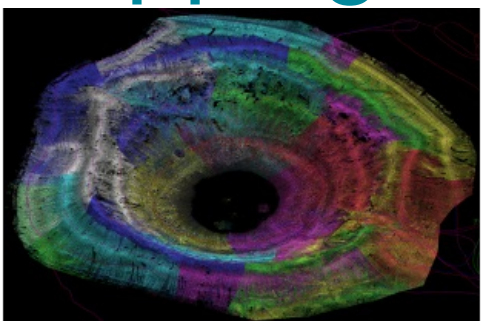
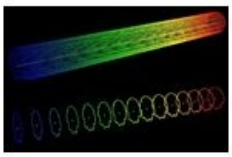
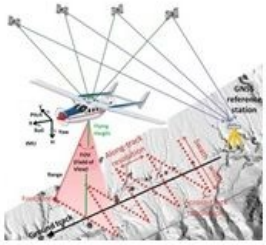
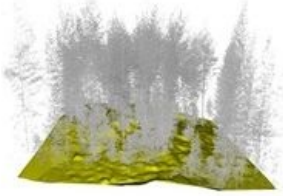
7 Inspiring Articles about Lidar Mapping









The Fierce Rise of Airborne Lidar

An increasing number of professionals are discovering that Lidar is the most suitable solution for their needs. Lidar is a sophisticated method of mapping terrain features and man-made structures to obtain precise, survey-grade data. We've selected seven of the best Lidar-related articles showcasing mapping and surveying projects carried out using aircraft, UAVs, cars and even backpacks. Read on to immerse yourself in the exciting and inspiring world of Lidar!

Automated Modelling of Tunnels

Automated Modelling of Tunnels

Tunnels must be regularly monitored to meet safety requirements and to prevent excessive deformation or displacement. Tunnels are currently monitored by measuring a few benchmarks using total stations or other surveying instruments. These techniques are effective and precise, but also slow and expensive. In the case of rail tunnels, for example, the regular train schedule is disrupted whenever land surveyors have to operate inside the tunnel. This article presents a novel automated method for the geometric modelling of tunnels from mobile Lidar point clouds with sub-millimetre precision. The models can be employed for maintenance, project management and enhancement of future designs. Read on...

The Fierce Rise of Airborne Lidar

The Fierce Rise of Airborne Lidar

Today, automatic matching of overlapping aerial imagery and airborne Lidar are the main geodata technologies for capturing dense point clouds of the Earth's surface. The sampled points are used for the generation of bare ground representations which are often augmented with buildings and trees. Airborne Lidar is flourishing as a prevalent geodata acquisition technology and continues to show a fierce rise in terms of advancements and applications. Read on for an article that discusses the main technological advances of today's operational systems and surveys the state of the art, developments and trends. Read on...

Comparing Lidar and Photogrammetric Point Clouds

Lidar and Photogrammetry

Airborne Lidar and photogrammetry are both viable methods for capturing point clouds for 3D modelling of man-made hard structures. Although both methods produce point clouds, the manner of capturing data differs in many ways, resulting in point clouds with differing characteristics. In this article, the author evaluates Lidar and photogrammetric point clouds captured from unmanned airborne systems for inspecting a flood control structure. Read on...

Mobile Laser Scanning Point Clouds


Mobile Laser Scanning Point Clouds

The demand for 3D maps of cities and road networks is steadily increasing and mobile mapping systems are often the preferred geodata acquisition method for capturing such scenes. Manual processing of point clouds is labour-intensive and thus time-consuming and expensive. This article focuses on the state of the art of automatic classification and 3D mapping of road objects from point clouds acquired by mobile mapping systems and considers the feasibility of exploiting scene knowledge to increase the robustness of classification. Read on...

Terrestrial Laser Scanning in Forest Inventories


Terrestrial Laser Scanning in Forest Inventories

Terrestrial laser scanning (TLS) is an effective technique for acquiring detailed tree attributes in forest plots. During the last two decades, national mapping agencies, companies, universities and research organisations have put tremendous effort into developing methods for tree attribute estimation using TLS. There is, however, still a lack of proper understanding on TLS performance. Different data collection methods and processing standards have led to a large range in tree detection and measurement accuracy. This article explains the early results of an international benchmarking initiative for TLS methods in forest inventories. The study has identified important differences in methods that should lead to operational work guidelines. Read on...

Surveying the Past Using a Drone


Surveying the Past Using a Drone

Archaeology has long been reliant on ground-level geophysical disciplines and aerial photographs shot from an aircraft or ultralight. Airborne observations not only enable remains that are invisible on the ground to be detected and studied in a non-destructive way, but also to pinpoint where reconnaissance probes or excavations should be performed. If a site is covered by dense vegetation, Lidar is the only tool practicable for aerial observation. Lidar was applied in a unmanned aerial system (UAS or ‘drone’) survey of the site known as ‘Caesar’s Camp’, situated in the French municipality of Changé/Saint-Piat, located 2km south of Maintenon. Read on...

Laser Scanner in a Backpack


Laser Scanner in a Backpack

Laser scanning systems have gone through a major evolution in the past decade. After the initial breakthrough of airborne laser scanners (ALS), other types of laser scanning systems have emerged, most notably terrestrial laser scanners (TLS) and mobile laser scanners (MLS). While these three main types of Lidar systems together serve a large number of applications, none of them are optimised for fast and flexible scanning in challenging locations, rugged terrain and complicated urban structures. Personal laser scanners (PLS) fill this void and are now evolving towards compact, agile and flexible solutions for mapping complex environments. This article explains the new Akhka R2 PLS and illustrates its use in various applications. Read on...

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https://www.gim-international.com/content/article/7-inspiring-articles-about-lidar-mapping