

Digital Modeling Digital

Digital elevation model

useful for landscape modeling, city modeling and visualization applications, a DTM is often required for flood or drainage modeling, land-use studies, geological

A digital elevation model (DEM) or digital surface model (DSM) is a 3D computer graphics representation of elevation data to represent terrain or overlaying objects, commonly of a planet, moon, or asteroid. A "global DEM" refers to a discrete global grid. DEMs are used often in geographic information systems (GIS), and are the most common basis for digitally produced relief maps.

A digital terrain model (DTM) represents specifically the ground surface while DEM and DSM may represent tree top canopy or building roofs.

While a DSM may be useful for landscape modeling, city modeling and visualization applications, a DTM is often required for flood or drainage modeling, land-use studies, geological applications, and other applications, and in planetary science.

== Terminology ==

Digital modeling and fabrication

Digital modeling and fabrication is a design and production process that combines 3D modeling or computing-aided design (CAD) with additive and subtractive

Digital modeling and fabrication is a design and production process that combines 3D modeling or computing-aided design (CAD) with additive and subtractive manufacturing. Additive manufacturing is also known as 3D printing, while subtractive manufacturing may also be referred to as machining, and many other technologies can be used to physically produce the designed objects.

== Modeling ==

Digital outcrop model

A digital outcrop model (DOM), also called a virtual outcrop model, is a digital 3D representation of the outcrop surface, mostly in a form of textured

A digital outcrop model (DOM), also called a virtual outcrop model, is a digital 3D representation of the outcrop surface, mostly in a form of textured polygon mesh.

DOMs allow for interpretation and reproducible measurement of different geological features, e.g. orientation of geological surfaces, width and thickness of layers. The quantity of identifiable and measurable geological features highly depends on the outcrop model resolution and accuracy.

Using remote sensing techniques enables these 3D models to cover areas with difficult accessibility, e.g. several meter high cliff walls. The fact that geological interpretation can be performed on the screen, also in inaccessible areas where using conventional fieldwork methods may be unsafe, and the large quantity of data that can be collected in relatively short time are the key advantages of using DOMs. Georeferencing digital outcrop models

allows for integration with other spatial data, e.g. results of digital geological mapping or GIS.

Alternatively to the photorealistic textured models 3D digital outcrop models may be represented by a point cloud coloured with the spectral (RGB) data from the corresponding images. Such surface model...

Digital library

A digital library, also referred to as an online library, an internet library, a digital repository, a library without walls, or a digital collection,

A digital library, also referred to as an online library, an internet library, a digital repository, a library without walls, or a digital collection, is an online database of digital resources that can include text, still images, audio, video, digital documents, or other digital media formats or a library accessible through the internet. Objects can consist of digitized content, such as print or photographs, as well as originally produced digital content, including word processor files or social media posts. In addition to storing content, digital libraries provide mechanisms for the organization, searching, and retrieving of content from the collection. Digital libraries can vary immensely in size and scope, and can be maintained by individuals or organizations. The digital content may be stored locally, or accessed remotely via computer networks. These information retrieval systems are able to exchange information with each other through interoperability and sustainability.

== History ==

The early history of digital libraries is not well documented, but several key thinkers are connected to the emergence of the concept. Predecessors include Paul Otlet and Henri La Fontaine's Mundaneum...

Digital art

and digital cameras; to software such as digital art software, 3D modeling software, 3D rendering, digital sculpting, 2D graphics software, digital painting

Digital art, or the digital arts, is artistic work that uses digital technology as part of the creative or presentational process. It can also refer to computational art that uses and engages with digital media. Since the 1960s, various names have been used to describe digital art, including computer art, electronic art, multimedia art, and new media art. Digital art includes pieces stored on physical media, such as with digital painting, as well as digital galleries on websites. Digital art also extends to the field of visual computing.

== History ==

In the early 1960s, John Whitney developed the first computer-generated art using mathematical operations. In 1963, Ivan Sutherland invented the first user interactive computer-graphics interface known as Sketchpad.

Between 1974 and 1977, Salvador Dalí created two big canvases of Gala Contemplating the Mediterranean Sea which at a distance of 20 meters is transformed into the portrait of Abraham Lincoln (Homage to Rothko) and prints of Lincoln in Dalivision based on a portrait of Abraham Lincoln processed on a computer by Leon Harmon published in "The Recognition of Faces".

The technique is similar to what later became known as photographic...

Digital heritage

important in studying the socioeconomic status of the past. 3D Modeling

3D modeling has become more widely used due to an increase in technology that - The Charter on the

Preservation of Digital Heritage of UNESCO defines digital heritage as embracing "cultural, educational, scientific and administrative resources, as well as technical, legal, medical and other kinds of information created digitally, or converted into digital form from existing analogue resources".

Digital heritage also includes the use of digital media in the service of understanding and preserving cultural or natural heritage.

The digitization of both cultural heritage and Natural heritage serves to enable the permanent access of current and future generations to culturally important objects ranging from literature and paintings to flora, fauna, or habitats. It is also used in the preservation and access of objects with enduring or significant historical, scientific, or cultural value including buildings, archaeological sites, and natural phenomena. The main idea is the transformation of a material object into a virtual copy. It should not be confused with digital humanities, which uses digitizing technology to specifically help with research. There have been several debates concerning the efficiency of the process of digitizing heritage. Some of the drawbacks refer...

Digital photography

Digital photography uses cameras containing arrays of electronic photodetectors interfaced to an analog-to-digital converter (ADC) to produce images focused

Digital photography uses cameras containing arrays of electronic photodetectors interfaced to an analog-to-digital converter (ADC) to produce images focused by a lens, as opposed to an exposure on photographic film. The digitized image is stored as a computer file ready for further digital processing, viewing, electronic publishing, or digital printing. It is a form of digital imaging based on gathering visible light (or for scientific instruments, light in various ranges of the electromagnetic spectrum).

Until the advent of such technology, photographs were made by exposing light-sensitive photographic film and paper, which was processed in liquid chemical solutions to develop and stabilize the image. Digital photographs are typically created solely by computer-based photoelectric and mechanical techniques, without wet bath chemical processing.

In consumer markets, apart from enthusiast digital single-lens reflex cameras (DSLR), most digital cameras now come with an electronic viewfinder, which approximates the final photograph in real-time. This enables the user to review, adjust, or delete a captured photograph within seconds, making this a form of instant photography, in contrast...

Digital humanities

large cultural data sets to topic modeling. Digital humanities incorporates both digitized (remediated) and born-digital materials and combines the methodologies

Digital humanities (DH) is an area of scholarly activity at the intersection of computing or digital technologies and the disciplines of the humanities. It includes the systematic use of digital resources in the humanities, as well as the analysis of their application. DH can be defined as new ways of doing scholarship that involve collaborative, transdisciplinary, and computationally engaged research, teaching, and publishing. It brings digital tools and methods to the study of the humanities with the recognition that the printed word is no longer the main medium for knowledge production and distribution.

By producing and using new applications and techniques, DH makes new kinds of teaching possible while also studying and critiquing their impact on cultural heritage and digital culture. A distinctive feature of DH is its cultivation of a two-way relationship between the humanities and the digital: the field both employs technology in the pursuit of humanities research and subjects technology to humanistic questioning and interrogation.

== Definition ==

Scholars and practitioners are continually reformulating the definition of the digital humanities, so specific definitions can unnecessarily...

Digital literacy

Digital literacy is an individual's ability to find, evaluate, and communicate information using digital devices or digital media platforms, as well as

Digital literacy is an individual's ability to find, evaluate, and communicate information using digital devices or digital media platforms, as well as the ability to navigate, evaluate, create, and communicate information in digital environments. Digital literacy combines technical and cognitive abilities; it includes using information and communication technologies to create, evaluate, and share information, and critically examining their social and political impacts.

Digital literacy initially focused on digital skills and stand-alone computers, but the advent of the internet and social media use has shifted some of its focus to mobile devices.

Digital literacy is related to, but different from, other forms of literacy. Information literacy focuses on the ability to locate, evaluate, and utilize information through numerous formats. Media literacy refers to the ability to analyze and interpret media messages and their influence. In contrast, digital literacy integrates these competencies while also including the practical use of digital tools, participation in online environments, and the creation of digital content. This broader scope highlights the interactive and participatory...

Digital twin

in modeling and engineering. In the 2010s and 2020s, manufacturing industries began moving beyond digital product definition to extending the digital twin

A digital twin is a computational model of an intended or actual real-world physical product, system, or process (a physical twin) that serves as a digital counterpart of it for purposes such as simulation, integration, testing, monitoring, and maintenance.

By its strict definition, a digital twin is distinguished from an ordinary simulation in that it continuously uses real data from its physical counterpart to dynamically synchronize with the real system. A model that operates without data from its physical counterpart may also be described as a digital twin, but this is considered an overly broad and largely marketing-oriented interpretation of the concept.

A digital twin is "a set of adaptive models that emulate the behaviour of a physical system in a virtual system getting real-time data to update itself along its life cycle. The digital twin replicates the physical system to predict failures and opportunities for changing, to prescribe real time actions for optimizing and/or mitigating unexpected events observing and evaluating the operating profile of the system." Though the concept originated earlier (as a natural aspect of computer simulation generally), the first practical...

https://uk.fulldoc.me/pdf/224449/143893Y54W/scott-foresman-social__studies_our__nation.pdf

https://uk.fulldoc.me/play/ze/2Z2492E/parts__manual_honda-xrm_110.pdf

https://uk.fulldoc.me/ebook/407A03Q/607A3166Q0/ford_laser-wagon__owners_manual.pdf

https://uk.fulldoc.me/science/160926/697231Y23C/2008_jetta-service_manual-download.pdf

https://uk.fulldoc.me/short/160926/5W14J32696/asus__taichi-manual.pdf

https://uk.fulldoc.me/science/rs162609/552S50R599224449/2003_audi-a4__shock__and_strut__mount-manual.pdf

https://uk.fulldoc.me/edu/X22120G/160926/catholic_worship_full_music__edition.pdf

https://uk.fulldoc.me/chap/D4T0611850/D8T8433/yamaha-fj1100-1984_1993__workshop__service-manual-repair.p

df

https://uk.fulldoc.me/ppt/160926/3Y563O6322/corso_liuteria_chitarra_acustica.pdf

https://uk.fulldoc.me/lib/602NE72/721NE86274/evinrude_junior-manuals.pdf