

Abstract

A Study on 3D/4D Printing and Derivative Work

Park, Yusun

3D printing is a process of making three dimensional solid objects from a digital design. Computer-Aided Design (CAD) programs allow users to make CAD files from scratch and create new three-dimensional objects through 3D printers. Users can also scan pre-existing three dimensional objects and print them out through 3D printers. 4D printing is a process of making self-assembling objects by using materials that change their shape in response to movement or environmental factors, such as the presence of water, air, and/or temperature changes. A CAD file designing a new three dimensional object is protected by copyright as long as it has the minimal creativity required for copyright protection. The copyright infringement occurs when a user creates a CAD file based on the existing copyrighted work to print the object in 3D/4D without permission. When a user manipulates a CAD file to transform into a different shape, it might infringe on the original author's right to make a derivative work. This paper will examine the 3D/4D technologies and copyright infringement issues by characterizing CAD files under the Copyright law, and also discuss reinterpreting the copyright protection for derivative works.

Keywords

3D printing, 4D printing, Derivative work, CAD file, 3D printer, CAD program, Copyright infringement.