Methods and Systems for Creating 3D Virtual Artifacts Using Smartphones as Hand-Held Spatial Controllers

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- Computer Technology

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- 3D Modeling
- 3D Printing
- Computer Technology
- Smartphones
- Virtual Reality

Recent years have shown significant developments in 3D printing technology, making it a practical method of modeling and constructing objects. Advances in 3D printing have allowed for the production of various tools, artifacts, and even multipart structures. However, sometimes the programs and machinery used to develop the 3D models can be overwhelming and complicated for users. Design of 3D objects is done predominantly through 2D WIMP (windows, icons, menus, pointer) based programs that require extensive training. Further improvements in 3D printing modeling software and general functionality are still possible and necessary for more specific utility. •
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Researchers at Purdue University have developed a process for the utilization and exploration of 3D free-form shape designs enabled through interactions between a user and a mobile device. Software of this nature allows for extremely friendly functionality, simplifying complicated modeling projects to a handheld level. Through tilt and touch interactions on a mobile device, users can create, modify, and compose 3D swept surfaces via a virtual environment. The inherently 2D manipulation of mobile devices makes this possible. This technology advances 3D modeling and printing beyond computers into the palm of your hand.

Advantages:™™™™™™
-Mobile device manipulation™™•
-User friendly™™•
-Tilt and touch interactions™

Potential Applications:™•
-3D modeling™™•
-3D printing™™™™
-Design manipulation

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