gravity sketch

Use case

3d sketches and their use in the design pipeline

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Abstract

The purpose of this document is to position the GravitySketch tool within the traditional digital design pipeline and highlight its benefits in this context.

Overview

Despite the broad availability of advanced tools for digital design, there are still gaps in the pipeline. Digital painting and sketching are an inevitable part of the process, as there are 3d modeling applications. The transition from 2d ideation to 3d model execution remains the most critical phase, and it also represents the bottleneck of creativity in the production context. This paper evaluates the key factors of such gaps and describes how they can be resolved with the GravitySketch application.

Ideation

As of today, pen and paper are still the most used tools for creative communication and idea sharing. There is no associated cost of using them, they are easy to use, and also, they are accessible. Let's take a look what these critical factors play in the process:

- The low cost: As it removes the fear of using media, it makes it easy to be scrapped and changed.
- Ease of use: Sketching is natural to human and requires no special software education.
- Accessibility: Unapparent, but crucial factor of successful bipolar communication. As anyone can access such tool/media, it naturally engages all parties of visual communication.

GravitySketch combines simplicity of pencil sketching at the level of natural human gestures with open (disposable) space of virtual reality. Any stroke or line can be anytime and easily modified.

Sketch at Sketchfab: https://skfb.ly/6rRIF

Sketch development

Further down the design process, the sketches are being frequently changed - usually based on the feedback from client, engineering or just to explore new directions.

GravitySketch allows creators to draw free-hand or controlled vector curves in the space, and also surfaces or volumes. Thanks to the under-laying framework, these sketches could be exported to standard visualization or collaboration tools, such as Luxion Keyshot or Autodesk VRED even at very early stage. Although the model could be not entirely set yet, it is usable for both stylized or photorealistic rendering.

2d to 3d

As the design sketches/illustrations are informative enough at this stage, they serve as an underlay at typical 3d surfacing applications such as Autodesk Alias or ICEM Surf, where the feature lines are traced and surfaces modeled. This process requires skilled and expensive workforce.

Any content created with GravitySketch is always 3d and requires no tracing over. The data could be brought directly in as NURBS geometry.

Conclusion

Thanks to surface and curve parametrization in GravitySketch it is straightforward to instantly fine-tune the CAD model and significantly decrease the development time. Time gained at this phase could be used for more iterations, for more design loops, and for more exploration.

GravitySketch helps to boost the creativity without sacrificing related technical development context.