A World Made of Drawings

Harold is an interactive system which allows the user to create 3D worlds from 2D inputs. The 3D objects are reoriented as the camera moves through the imaginary world. Harold expands and explores the Virtual World by walking into and through it. The ultimate objective is to be able to draw a scene, move around it, and have everything look right and have the right 3D.

The older system of virtual reality approached the solution in two primary categories, as geometric and image-based. The drawback of the geometric approach is that there are often errors, and depending on changes the error could become more and more significantly apparent. Unlike the geometric approach the image-based approach avoids creating a geometric description of the scene, but instead it redisplays the original input images to reflect new camera approach.

The new approach used on Harold, that represents a 3D model of the environment by utilizing and populating drawing and not 3D objects. The most important disadvantage of the new approach is that the relationship between objects changes as the viewpoint changes.

Harold’s initial view of the world to the user shows a “ground.” The user has three buttons to choose from: the drawing button, the camera button, and the eraser button. The user can simply place the cursor at some point on the screen and that point may correspond as to a point of the world either on the ground or the sky.

Designers of Harold would ultimately like to incorporate more techniques from other system to their 3D curve system. Although they have three types of brushes, they would like to create a more advanced mechanism for drawings. They are also exploring animations such as flowing rivers or rain. It would certainly be interesting to watch the development, or better yet, be a part of the development and contribute to it.