Visualization of data has a long history. The process converts data into a form which is easier to comprehend: something our environment. A 2D mouse is not very useful in a 3D environment. On July 2013 Leap Motion released a device which can be used as a 3 dimensional mouse. ` The question is how can gesture recognition be used to control a visualization environment.

Computer games and visualization environments are typically played out in a 3D world projected on a 2D screen, or a 3D movie. The qwerty keyboard and a mouse are still the main input devices used today. The last upgraded mouse was introduced by Apple in 2009; the Magic Mouse. The Magic Mouse is a multi touch mouse and can be used to recognize simple gestures.

Visualization describes the process of converting numbers into a form we can see visually. In order to make the images more comprehensible, it is important to be able to change the visible aspects of an image dynamically. For example, the position of the camera can be moved to focus the attention of the viewer, or the transparency of objects can be changed to expose otherwise hidden features. Visualizations are typically not composed of a single image because they usually contain a time element – that is, the image varies from one time to the next. Movies are the typical result of visualization attempt.

We use software such as IDL, as well as publicly available tools such as PyOpenGL, VisIt, and Python. The ET consortium includes over 200 researchers across the world. We also works together with computer scientists at the National Center for Supercomputing Applications (NCSA) to run and visualize our simulations on the Blue Waters supercomputer, one of the most powerful supercomputers in the world. CCF-0851743

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Projects and Collaborations:

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Contact: Hans-Peter Bischof. Working in this area are several graduate and undergraduate students.