Point based rendering of models is a pretty matured field. In order to be able to visualize large polygonal meshes especially on normal machines, one has to make use of some level-of-detail based approach. One such technique is to create point based representation of such models. This model is then hierarchically simplified to yield lower resolutions.

A lot of techniques have been proposed to create lower resolution surfaces from the given polygonal model or high quality point model. Yet, there has been no analysis to compare these the results techniques with each other.

**Assignment**

We are looking for a student who would be interested in a project dealing with creation of multi-resolution representations of point surfaces. This would require reading some known techniques for the same and implementing them (please see methods like clustering, iterative simplification in [1]). Thereafter, we would like to compare them with some of our algorithms.

**Requirements**

- Good skills in C/C++, OpenGL and a mathematical background
- 40% theory
- 40% implementation
- 20% testing

**Student Project Type**

Students can take this project as their bachelor's or master's thesis.

**Supervision**

Prof. Dr. Renato Pajarola
Prashant Goswami (Assistant)

**Contact**

Write an E-Mail to goswami@ifj.uzh.ch

**References:**

2. QSplat : a multiresolution point rendering system for large meshes. Szymon Rusinkiewicz and Marc Levoy. SIGGRAPH 2000