Wikianalytics offers a new methodology and platform for 3D applications.

Wikianalytics is based on the concept of collective intelligence and social computing. In Wikianalytics, complex and large scale data is analysed via a group of analysts collectively in an interactive and collaborative way. The data mining life cycle is not a linear process but a dynamic composition of concurrent interactive processes with the joint effort of participating analysts. Each analyst contributes data, prior knowledge, expertise, algorithms to build, validate, improve, integrate models (knowledge). Also, modern cloud computing and social computing model provides an ideal platform for Wikianalytics.

Why is Wikianalytics suitable for 3D:

Data intensive : Data intensive is not just about the quantity but also the complexity. Given the human genome example, the pervasive use of human genome for healthcare requires the analysis to be done with medical knowledge. Analysing human genome is not just the issue of dealing with the huge amount of sequence data but also the need of deep analysis the biological and medical implication of the data. To meet this challenge, collective effort in analysis is essential.

Distributed : Distributed feature has three means : 1) data is distributed 2) data owner/analysts are distributed and 2) data analysis environment is distributed. All three aspects requires the analysis to be a compositional process. That is, distributed data can be analysed in a distributed way and the analytical products ( information or knowledge) can then be combined (integrated). Such a composition of distributed process is a “communicating parallel composition” in the sense that for time to time each individual component process will communicate with others to exchange the information and coordinate the actions. Such a distributed analytics process can be realised well by the Wiki collective intelligence principle.

Dynamical: Dynamical nature of data intensive computing comes the dynamism in data availability in data comprehension and also in the inherent dynamism in the applications. From data analysis point of view, the dynamism is reflected by the fact that an analytical process cannot be captured by a static workflow, rather it has to be dynamically constructed based on the partial information derived during the analysis. Such an adaptive nature of analysis is described in Bayesian statistics as the posterior probability where knowledge (belief) is dynamically updated based on the new available and analysed data. Wikianalysis is not based on the concept of organising data via workflow, rather its collective mechanism reflects precisely the dynamism needed in analysing complex and dynamic data where the analysis process requires to be built adaptively based on the up-to-date analytical results gain from the joint effort.