

A procedural generation of landscapes often meets a need for real spatial data at finer resolution than data available at the moment. We introduce a method that refines the spatial data at the coarse resolution into the finer resolution utilizing other data sources which are already at the better resolution. We construct weighted local linear statistical models from both the coarse and utility data and use the by-models-learned dependencies between the data sources to predict the needed data at better resolution. To achieve higher computational speed and evade utility data imperfection, we utilize truncated singular value decomposition which reduce a dimensionality of the data space we work with. The method is highly modifiable and its application shows plausible real-like results. Thanks to this, the method can be of practical use for simulation software development.