

Low computational cost crowd rendering method for real-time virtual heritage environment

Abstract

In recreation of virtual cultural heritage sites and urban environment simulations, the rapid display of densely populated scenery is a common requirement. An empty virtual environment will diminish the immersive experience that the simulations suppose to be presented, that is why simulations of massive virtual characters are needed to deliver sensible immersive experience to the user. In recent years, the growth of research in this area has escalated and there has been many techniques developed in crowd simulations area, both for realtime and non-real time rendering. This paper presents several significant related works in crowd simulation and crowd rendering. Our aim is to address one of the crowd simulation problems, which is crowd rendering in large scale virtual heritage environment. Due to rendering large scale virtual heritage environment were already computational expensive, rendering crowd will add more load to the rendering process. We proposing range detection technique to produce low computational cost real-time rendering of virtual crowd in large scale virtual heritage environment. Range detection technique has been chosen because its ability to produce low computational cost compare to other rendering techniques.