EuroSciCon
6th International Conference on
COMPUTER GRAPHICS, ANIMATION & COMPUTER-AIDED DESIGN
Computer Graphics 2018
June 18-19, 2018 | London, UK



University of Applied Sciences and Arts Northwestern Switzerland
School of Architecture, Civil Engineering and Geomatics

Visualization of Large-Scale Geodata in the (mobile) Webbrowser

Martin Christen, Markus Fehr, Urs Clement
University of Applied Sciences and Arts Northwestern Switzerland

Rendering large city models with high polygon count and a vast amount of textures at interactive frame rates in the mobile webbrowser is still a rather difficult to impossible task as it highly depends on the client hardware, which is often insufficient, even if out-of-core rendering techniques and level of detail approaches are used. Rendering complex city models on mobile devices is even more challenging. An approach of rendering and caching very large city models in the cloud using ray-tracing based image provisioning is introduced. This allows rendering large scenes efficiently, including on mobile devices. With this approach, it is possible to render cities with nearly unlimited number of polygons and textures.

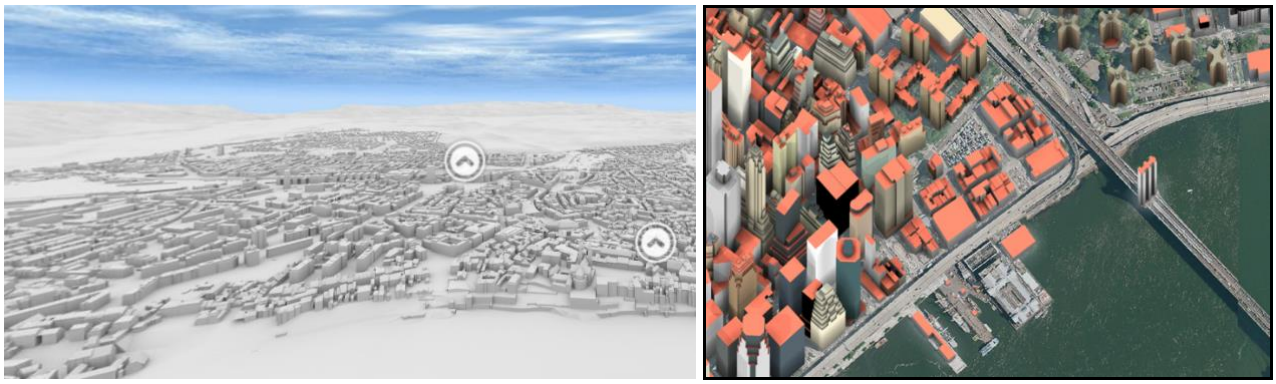


Figure 1: Visualization of a City with and without textures in the mobile webbrowser

Biography

Martin Christen is a professor of Geoinformatics and Computer Graphics at the Institute of Geomatics Engineering at the University of Applied Sciences and Arts Northwestern Switzerland. Currently, his research focuses on geospatial large-scale visualizations and augmented reality.
Prior to his academic career, he worked in the geoinformation industry where he developed virtual globes and in the game industry where he programmed various computer games.

Presenting author details

Full name: Martin Christen
Contact number:+41 79 661 93 39
Email id: martin.christen@fhnw.ch
Category: Oral presentation
Session name: 3D Web Technology

Research interest: Physically based modelling, Geospatial Virtual- and Augmented Reality, 3D geoinformation, and interactive 3D Maps, Machine Learning, Big Data Visualization