
High-quality Transparent Visualization for 3D Scanned Data of Cultural Heritage Objects

Satoshi Tanaka (Ritsumeikan University)

E-mail: stanaka@is.ritsumei.ac.jp

abstract

This talk introduces our recent achievements on high-quality and transparent 3D imaging of the large-scale and complex point clouds acquired via the 3D scanning, i.e., the laser scanning and the photogrammetric scanning, of real 3D objects. Our method is based on a stochastic algorithm and directly uses 3D points acquired by the 3D scanning as the rendering primitives. The technique achieves quick rendering and the correct depth feel of large-scale and complex 3D objects in the real world quite easily. We demonstrate the effectiveness of our method by applying it to the famous Japanese festival floats of high cultural value and many others (see Figure 1, for example).

Work Cited

Tanaka, S., Hasegawa, K., Okamoto, N., Umegaki, R., Wang, S., Uemura, M., Okamoto, A., Koyamada, K. (2016). See-Through Imaging of Laser-scanned 3D Cultural Heritage Objects based on Stochastic Rendering of Large-Scale Point Clouds. *ISPRS Ann. Photogramm. Remote Sens. Spatial Inf. Sci.*, III-5, 73-80, doi:10.5194/isprs-annals-III-5-73-2016



Figure 1. Transparent visualization of Hachiman-yama float in the Gion Festival (Kyoto city, Japan). (This image presented with the permission of the Hachiman-Yama Preservation Society.)