# Cloud Interactive Computing in Digital Historical Sites

The NCHC Render Farm plays a vital role in the digital preservation and restoration of Taiwan's historical sites. Leveraging high-performance computing, users can harness cloud-based processing power to seamlessly edit point cloud models with vast vertex counts in real-time, using lightweight devices.

Point cloud scanning relies on LiDAR for depth data and RGB cameras for color information. However, environmental factors, such as wind and lighting, can introduce data inconsistencies, leading to color mapping inaccuracies. To tackle this challenge, NCHC has pioneered Cloud-based Smart Point Cloud Processing (CSPCP), an automated solution for repairing color maps within point cloud models, recognized with the 2021 R&D 100 Award.

By harnessing cloud-based high-performance computing, we enable real-time rendering of intricate point cloud models. These models serve as digital archives and the building blocks of techno-art creations. By leveraging GPU parallel processing, we seamlessly integrate visual effects into these models, offering smooth and captivating representations. The fusion of point clouds and art provides a unique intersection of technology and artistic expression.

NCHC RENDER FARM

Source of point clouds :
National Museum of Taiwan Literature

Restoring the original colors of historic sites
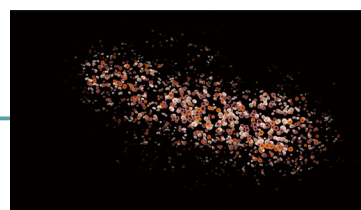
Parallel computing for visual effects
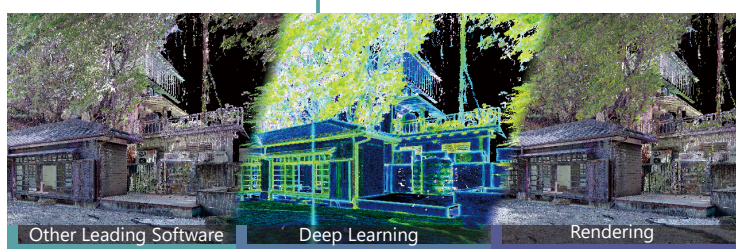
Other Leading Software   Deep Learning   Rendering

CSPCP

Cloud-based Smart Point Cloud Processing

Techno-Art   Cloud-based Real-time Interactive Experience