

digital cultural heritage: FUTURE VISIONS

Edited by Kelly Greenop and Chris Landorf

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The papers published in these proceedings are a record of the conference mentioned on the title page. They reflect the authors' opinions and, in the interests of timely dissemination, are published as submitted in their final form without change. Their inclusion in this publication does not necessarily constitute endorsement by the editors.

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The Conference Convenors received a total of 44 abstracts. Abstracts underwent a double-blind peer review by two members of the Conference Organising Committee. Authors of accepted abstracts (32) were invited to submit a full paper. All submitted full papers (18) were again double-blind peer reviewed by two reviewers. Papers were matched as closely as possible to referees in a related field and with similar interests to the authors. Sixteen full papers were accepted for presentation at the conference and a further 6 papers were invited to present based on submitted abstracts and work-in-progress. Revised papers underwent a final post-conference review before notification of acceptance for publication in these conference proceedings.

Please note that papers displayed as abstracts only in the proceedings are currently being developed for submission to a digital cultural heritage special edition of an academic journal.

Abstract

Tunpu villages are traditional rural landscapes located in the Karst environment in Guizhou Province, China. The spatial patterns of these villages are the result of continuing human-nature interactions over 600 years, which are of both historical and contemporary significance. During the past decades, however, Tunpu villages have been changing with increasing speed and important spatial patterns have quickly faded away. The aim of this paper is to explore an innovative approach to capture the spatial patterns of Tunpu villages for heritage conservation purposes. Aerial and terrestrial photogrammetry and hand-held laser scanning tools were used to collect point cloud data from two case study villages, which can quantitatively represent the spatial patterns of these villages at different scales. This paper confirms that, with 3D point cloud data and the related technologies, a Tunpu Village of approximately 3 km² was surveyed in 4.5 hours and digital models at three different scales were generated in 23.5 hours. This multi-scale approach was able to accurately capture the spatial patterns of Tunpu villages. The outcome is comparable in accuracy to manual measurement techniques, and at a greatly increased level of efficiency and scope.

Keywords: Traditional rural landscape; spatial pattern; photogrammetry; laser scanning; Tunpu village

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