3D BUILDING RECONSRUCTION USING CUBOIDAL FITTING AND GEOSPATIAL INFORMATION

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INTRODUCTION

In the recent data analysis of people who have died in building construction sites in the year 2019, the number of people who have died or injured due to falling from a building because of mistakes in the construction of building tops the list, followed by death caused by broken objects in the building which comes second in the list. Deaths due to electrocution comes third in the list. These deaths due to first two reasons can be avoided, if the mistakes in the building construction were identified in the initials stage of construction itself. The proposed 3D reconstruction of 2D images addresses these problems, so that we will have a safer construction environment in the future.

3D reconstruction from a set of 2D images has been widely used in building modelling. However, there exist some intrinsic information of building that can be exploited for automatic modelling. In this proposal, we propose a novel method for building modelling. We first fit cuboids into the2D images. From the cuboid fitting, we initialize the building shape. The building's texture is late updated via image panorama. Finally, the building model is refined with the geospatial information. The experimental results demonstrate the effectiveness of our proposed method.

PROPOSED FRAMEWORK

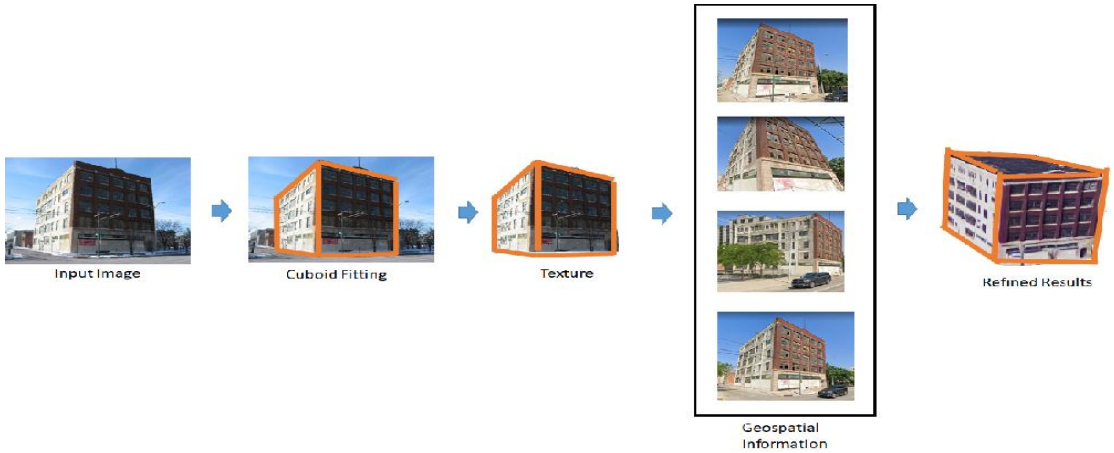

FIGURE 1

The proposed framework represents the overall stages of 3D reconstruction of objects using cuboidal fitting.

EXPERIMENTAL RESULTS

FIGURE 2

FIGURE 3

FIGURE 4

The above figures represent the output which shows only the targeted buildings with no surrounding