

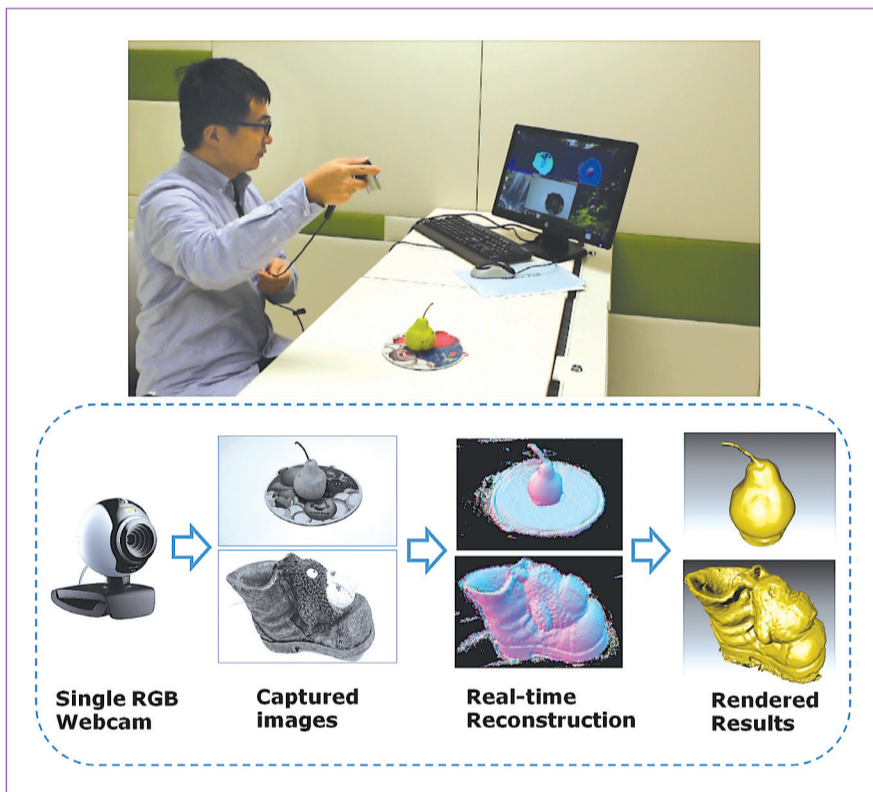
基於單目相機的實時3D掃描和3D打印系統

A single camera based real-time 3D scanning and 3D printing system

使用您的webcam在家中掃描並打印3D物體

Scan 3D objects by your webcam and print at home

我們研發了一款先進的實時3D掃描系統，借助於一枚消費級別的攝像頭，例如webcam，或是智能手機或平板設備中搭載的攝像頭，讓您輕鬆重建真實世界中的3D物體。在3D掃描過程中，我們的系統可實時反饋重建效果，幫助用戶有效地規劃掃描的動作和角度，以便提高3D掃描質量。掃描完成的3D模型可以上傳到我們研發的低成本高精度3D打印機執行打印。



我們的3D掃描系統概覽
Overview of our 3D scanning system

We developed an advanced real-time 3D scanning system, which allows users to reliably reconstruct the 3D models of real-world objects using a single consumer level camera, e.g., webcam or smart-phone/tablet camera. The system can visualize immediately the 3D reconstruction results in the course of scanning to assist users to plan their movements for improving reconstruction quality. The reconstructed 3D models can be easily uploaded to our developed low-cost and high-precision 3D printer for printing.

特色與優點

- 易用性 - 用戶可以方便地使用 webcam 或智能手機執行掃描，無需專門設備
- 實時性 - 我們的系統能夠實時重建與可視化
- 可擴展性 - 算法複雜度獨立於深度搜索範圍

應用

- 增強和混合現實
- 電腦遊戲
- 家用3D掃描和3D打印



經由我們的系統掃描和打印的3D人臉模型
A 3D face model scanned and printed by our system

Special Features and Advantages

- Easy scanning. Users can simply use a webcam or smart-phone for 3D scanning. No special device is needed
- Real-time. The system can do real-time reconstruction and visualization
- Scalability. The algorithm complexity is independent of depth search range

Applications

- Augmented and mixed reality
- Computer gaming
- Home-use 3D scanning and 3D printing

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