NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

School of Computer Science and Engineering

College of Engineering

High Dynamic Range Panoramas using a Mobile Phone

Abstract

During panorama stitching, some brightness data is often discarded during illumination correction. This project explores techniques to preserve the brightness data when stitching mobile phone photos, and automates the process to generate HDR panoramas which can then be used as environment maps to illuminate 3D scenes.
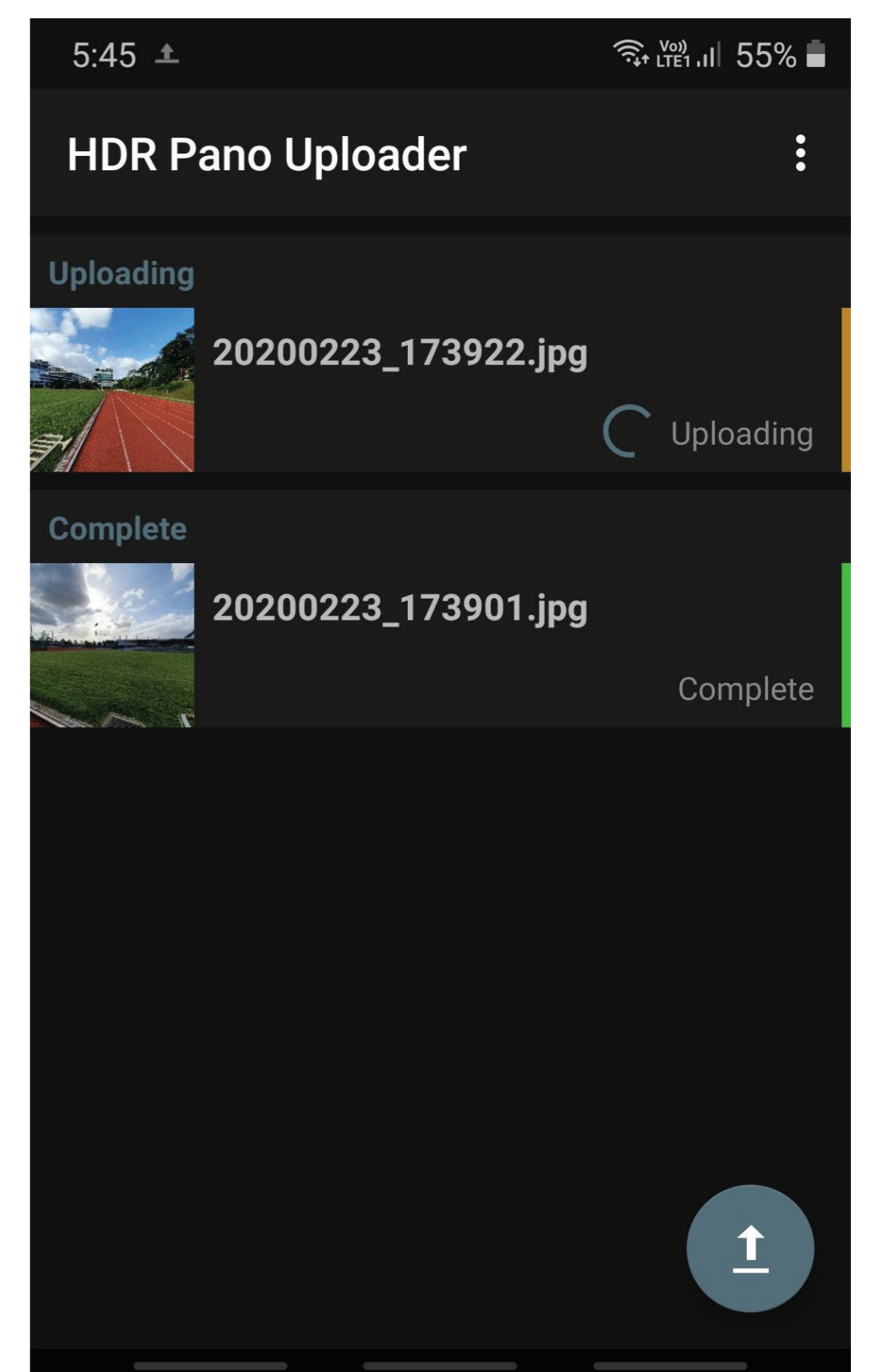
Objectives

Goal 1

Investigate techniques and automate the creation of HDR panoramas
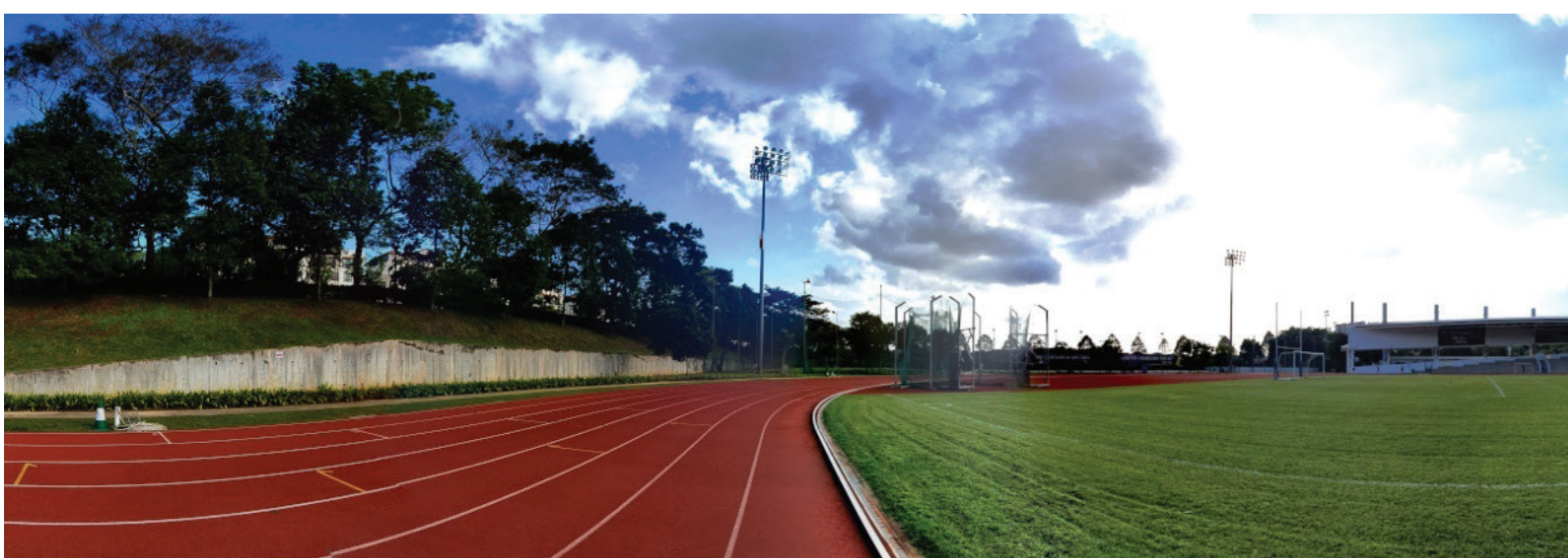
Goal 2

Develop an Android app and a server program to stitch HDR panoramas from a mobile phone

Android Application

Results

HDR Panorama

3D Scene lit by **HDR** Panorama

3D Scene lit by **non-HDR** Panorama

HDR panoramas generated through this technique can retain more brightness data than standard panoramas, and yields better results when used to light up 3D scenes

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