Photosensitive Panoramic Photography Device

Lin, Hin Wang (School: Municipal Budget Educational Institution "Lyceum No.165")

Panoramic photography has been around for over 100 years and is often used in photographing large crowd or spectacular scenery. However this technique requires special and expensive camera that merges images from different angles to form a panorama. In recent years, panorama function is built in to smartphones which required the user to turn slowly with the phone to capture the panoramic image. However the quality of these photos are often not very high due to the unsteady hands of the user and more seriously the camera is not able to adjust effectively the brightness of the environment from different angles which then lead to over-exposed or blur photos. The aim of this project is to develop a user-friendly, high-quality panoramic photography device which can produce smooth images with auto adjustment of brightness. This project uses an Arduino Nano board embedded with a smartphone. The C computer program written in the device is used to analyze the data from a photoresistor (LDR) received under different lighting situations. To increase the brightness accuracy of the device, the relationship between the rotating speed of the camera and brightness surrounding has been tested and recorded for a month under different weather and lighting conditions. Based on the data collected, the device can automatically adjust the rotating speed so that panoramic photos of adequate brightness can be taken. The device can be mounted on a hand-held selfie stick or conventional camera tripod and can be operated with an infra-red remote control. The cost of this Photosensitive Panoramic Photography Device is less than US$20 which is much lower than the professional panoramic cameras with similar high quality images produced.