

Live 3D Panorama Webcam

Thesis outline

You probably know panoramic pictures which are made by stitching together multiple pictures. Maybe you also know 3D panoramas, where multiple photographs are stitched together in such a way that a kind of semi-3D model is created, allowing you to navigate inside the picture with your mouse/keyboard. The goal of this thesis is to develop such an automated 3D panorama, and make it live, meaning that the semi-3D model is always updated. This will be achieved by putting a camera on a pan-tilt unit, taking pictures at predefined angles and stitching these photographs together and publishing the resulting semi-3D model on a website, all automatically and in a continuous loop.



Student Tasks

The student will receive the following:

- 1 Camera and 1 Pan-tilt unit
- Source code to control the pan-tilt unit (C++)
- Source code to read images from the camera (C++)
- Methodology and code to stitch images together
- A PC which can act as a web server

With this information, the student is required to output the following:

- A program integrating all of the above: controlling the pan-tilt unit, taking snapshots with the camera, stitching them together and publishing the result as a web service

Student Profile

- Good knowledge of programming
- Sound interest in computer vision