3dscanner

Members

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Topic/Objectives

We plan to write a program that will extract 3D models of scenes from videos taken with the Nintendo 3DS.

- **Objective: Understand the AVI file format produced by 3DS systems**
    - Result: two separate video streams for the left and right camera to make processing simple
    - Result: code that allows OpenCV to properly interpret a single video stream that contains a stereo pair of images for each frame as two separate video streams
    - Work required: research
    - Achievable by 11/13/14
- **Objective: Reconstruct a 3D scene using a single stereo image pair produced by 3DS systems**
    - Result: a proper tuning of the StereoSGBM class in OpenCV that will produce a disparity map that appears to be correct
    - Result: a 3D point cloud of the scene that appears to be an accurate reconstruction
    - Work required: documentation reading/experimentation
    - Achievable by 11/13/14
- **Objective: Track 3DS camera position**
    - Result: Information regarding the extrinsic parameters of the camera
    - Work required: documentation reading/looking at examples or tutorials/experimentation
    - Achievable by 11/13/14
- **Objective: Properly rectify multiple 3D scenes together**
    - Result: a point cloud of a single scene that has been composited together from multiple angles of the same scene with a visually satisfying degree of accuracy
    - Work required: documentation reading/ looking at examples or tutorials/research/experimentation

    - Achievable by 11/20/14
- **Objective: Final product**
    - Result: A python script that will take as input a single AVI file produced by a Nintendo 3DS system and output a 3D point cloud of the scene in the video with a visually satisfying degree of accuracy
    - Work required: everything else must be complete
    - Achievable by 12/2/14