

15-663 Homework Assignment 6 Report

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1 Implementing structured-light triangulation

Video processing

Figure 1 shows the per-frame shadow edges and per-pixel shadow time estimation.

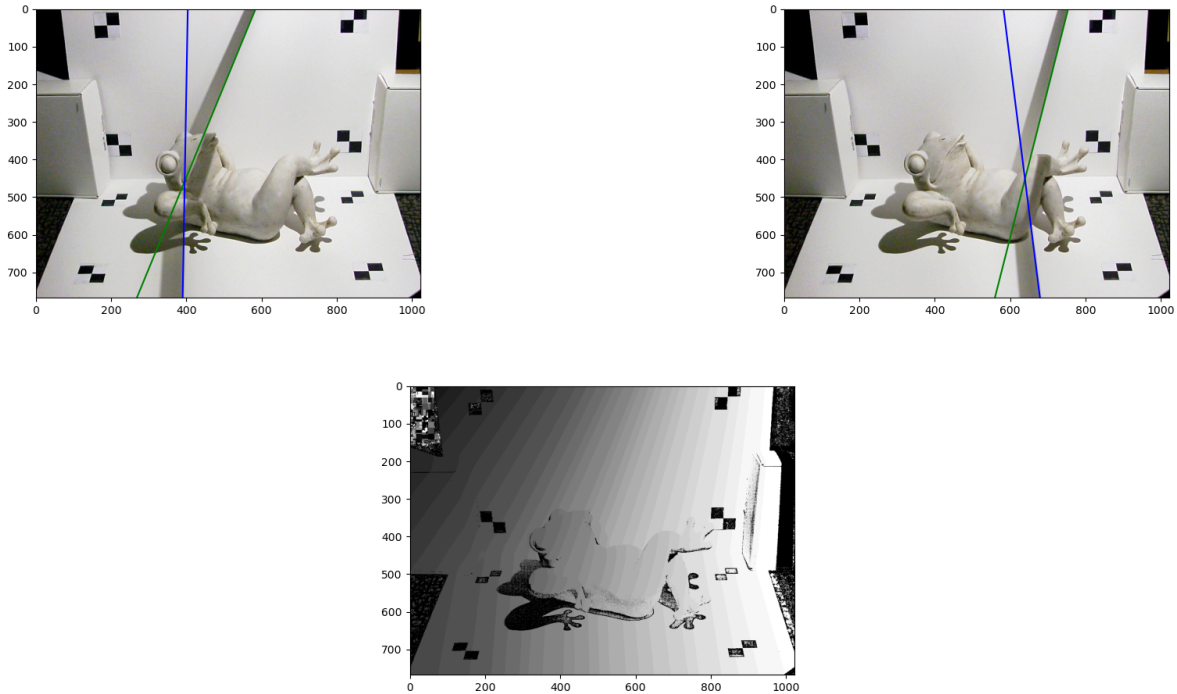


Figure 1

Reconstructions

Figure 2 shows the reconstructed point cloud.

2 Building your own 3D scanner

I setup the scene as shown in figure 3. The two scanned objects are a bottle of pills and a small jar, as shown in figure 4. The calibration process is shown in figure 5. I was unable to derive any 3D reconstruction from my images because the calibration script failed at the extrinsic calibration step, at function `cv2.solvePnP`.

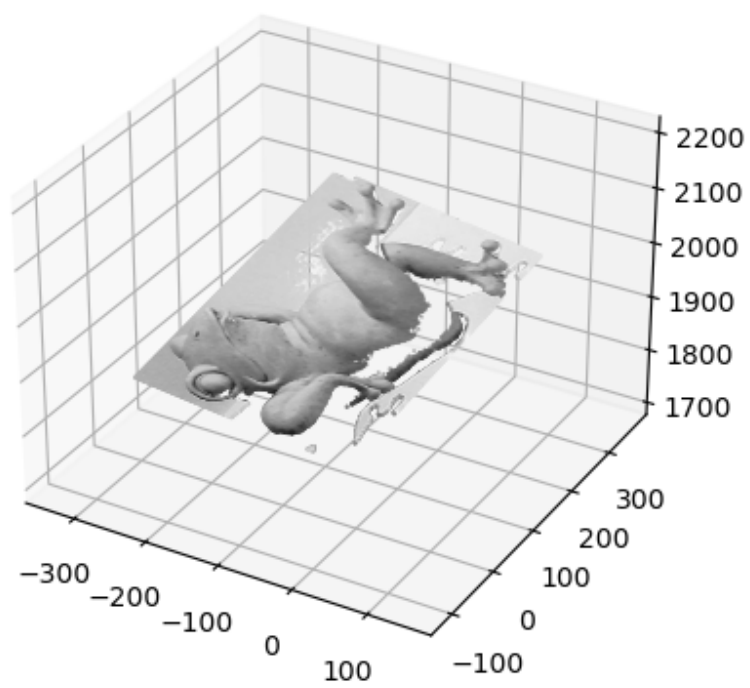


Figure 2: Reconstruction



Figure 3: Setup



Figure 4: Objects

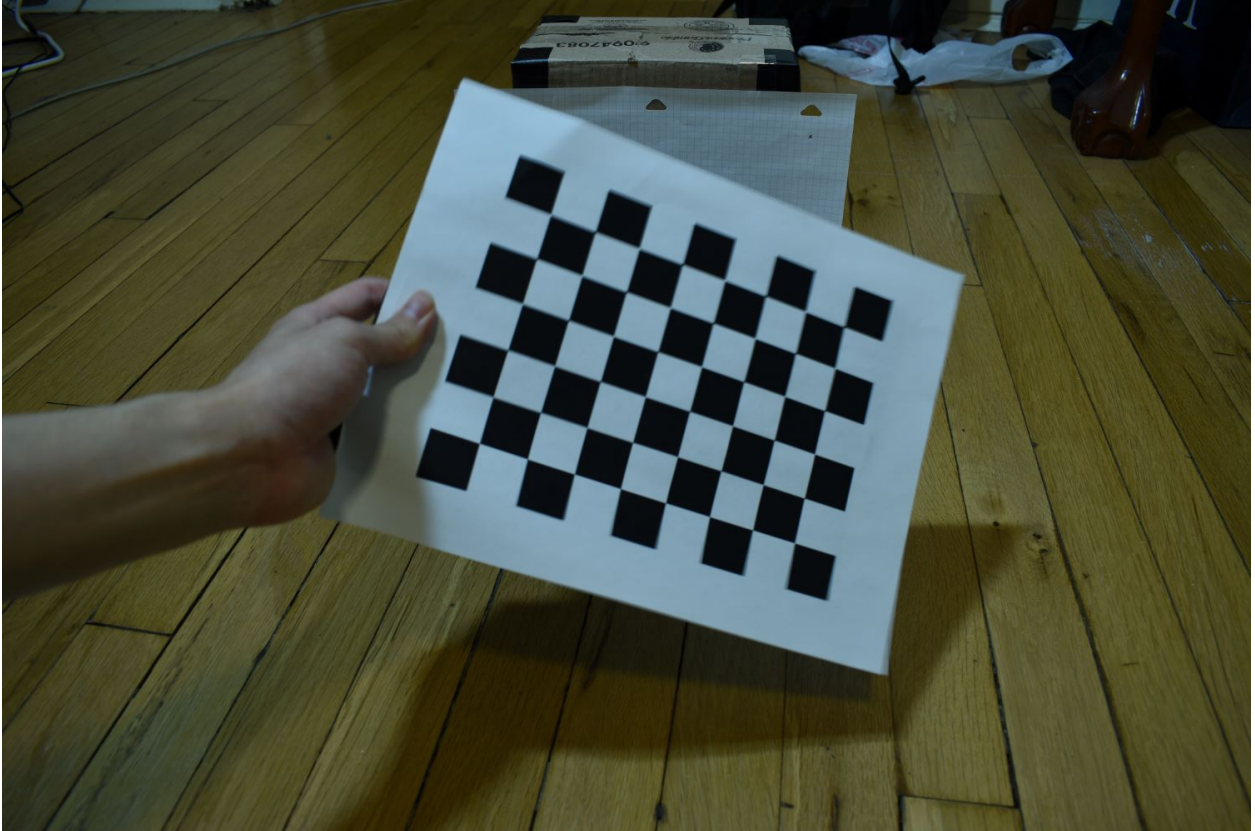


Figure 5: Calibration