

CS 83: Computer Vision

3D Reconstruction

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Abstract

This project implements a step-by-step AR application.

Credit Statement

I discussed ideas with:

1. Ivy (Aiwei) Zhang
2. Angelic McPherson

However, the code and writeup are entirely my own, with reference to class notes.

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1. SPARSE RECONSTRUCTION

- 1.1. **Eight Point Algorithm.**
- 1.2. **Epipolar Correspondences.**
- 1.3. **Essential Matrix.**
- 1.4. **Triangulation.**
- 1.5. **Test Script.**

2. DENSE RECONSTRUCTION

2.1. **Image Rectification.**

2.2. **Disparity Map.**

2.3. **Depth Map.**

3. POSE ESTIMATION

3.1. **Camera Matrix Estimation.**

3.2. **Intrinsic/Extrinsic Parameters Estimation.**

3.3. **CAD Alignment and Projection.**