Project Presentation – Week 7

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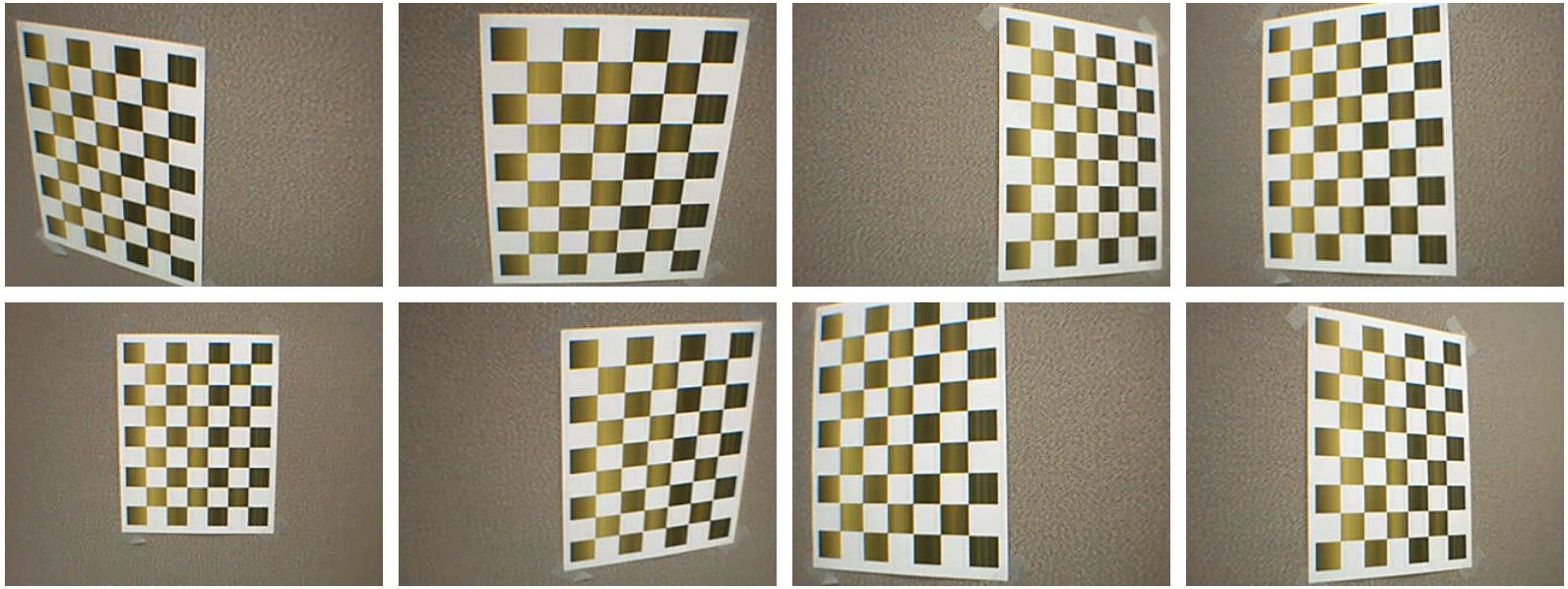
For UCF REU in Computer Vision, Summer 2010

Changes

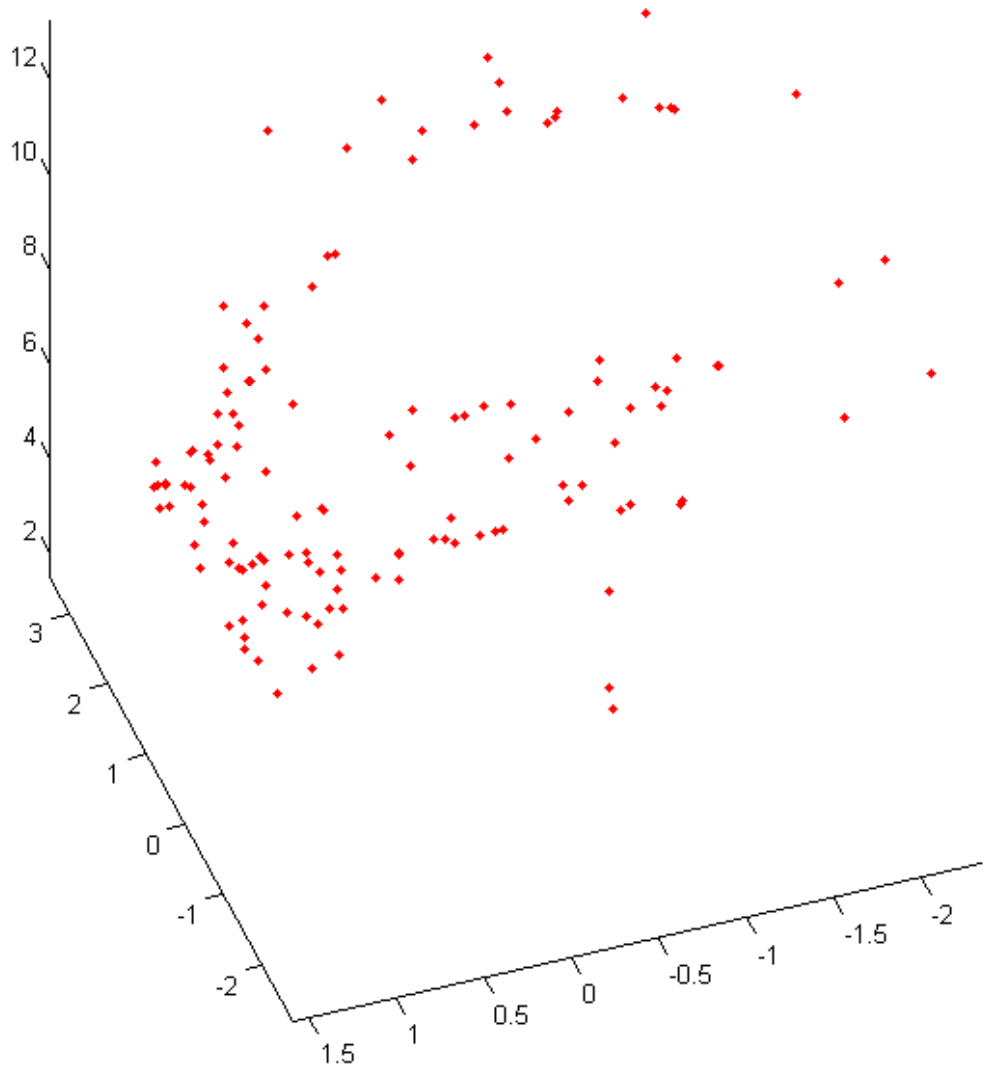
- Assuming camera is calibrated
  - Could possibly switch back later…
  - … but for now makes metric reconstruction easier



Metric Reconstruction

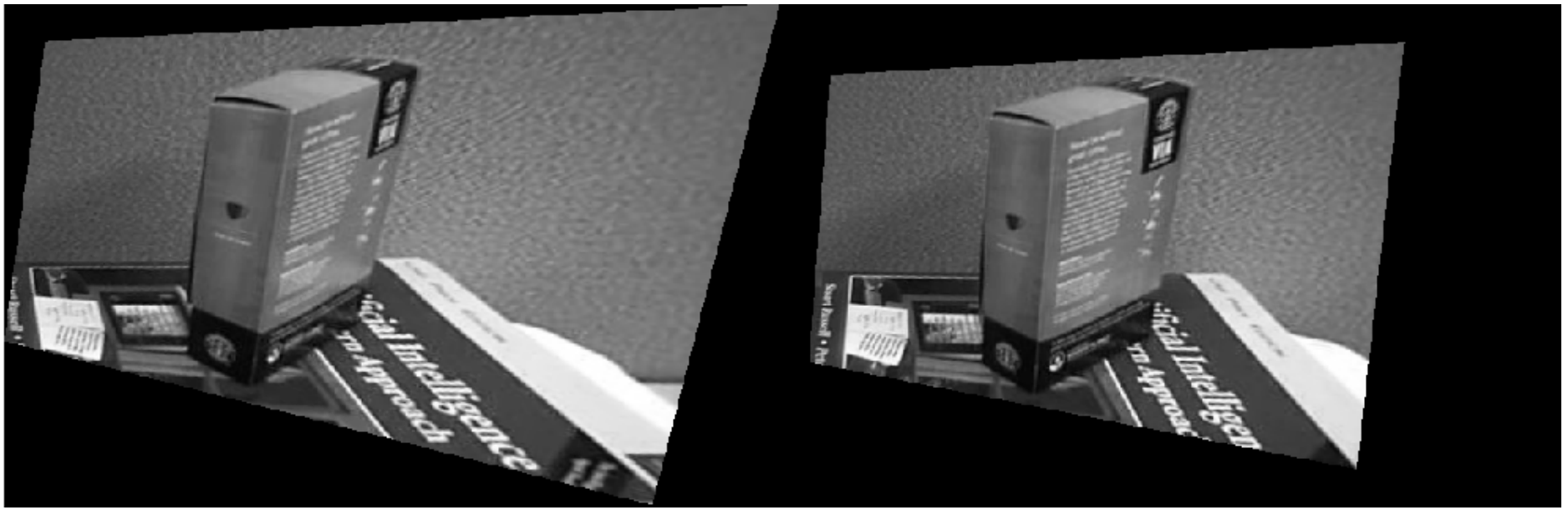
- Calculate initial matches
  - RANSAC outliers
- Correct points using camera calibration
- Calculate essential matrix
  - Rotation + translation
- Calculate 3D structure

SUPER AWESOME DEMO TIME



Thoughts on initial results

- Needs dense matching
  - Ideally, epilines are horizontal across both images
  - Problem, my current implementation is off by up to 10 scan-lines (limits search but not ideal)



Goals

- Dense matching
  - Better recitfication?
- Adding a 3rd (or 4th, 5th, etc…) frame and calculating it's pose / adding it's 3D info
- Porting to a real-time capable language
  - Comparison with "Instantaneous Model"
  - Detection of objects which are not "moving with the environment"