

Assignment 5—Stitching distant geometry and specular reflections

1. Build a cube map of a real world scene.
 - Take at least 3 overlapping digital pictures of a real world scene from approximately the same point.
 - Approximate field of view your real world camera.
 - Register images 1, 2, ..., n-1 to image 0; an approximate manual registration suffices (3 rotational degrees of freedom); at the overlap blend with weights proportional to the distance to the center of each image.
 - Build a cube map from the registered images.
2. Extend your renderer to support environment mapping and environment mapped reflections.
3. Demonstrate the added functionality on a scene with a single perfectly reflective object.
 - The view should always be centered at the center of the object. In other words the controls should spin the object with 3 degrees of freedom.
 - Use both the environment map provided (`uffizi_cross.tiff`, courtesy of Paul Debevec) and the environment map you are making. The user should be able to switch between the two environment maps using the GUI.

Extra credit

- Image registration via correspondences (4%)
- Image registration via color differencing (4%)
- Complete panorama (2%)
- Fresnel reflections (2%)
- Anything else that makes a compelling visual experience (check with Paul and me first) (x%)

Turn in instructions

Turn in your work in an archive submitted via Blackboard Vista. The archive should contain:

- Source code and VC++ solution (please Build->Clean Solution to minimize submission size).
- The movie file and the path text files used to render the movie sequences.
- External libraries used.
- Code should compile, link, and run.
- A Readme.txt or Readme.doc file that lists the movie making library or software used, any special GUI features, and extra credit features attempted.