UAV-Based Infrastructure Monitoring

Inspection and Change Detection

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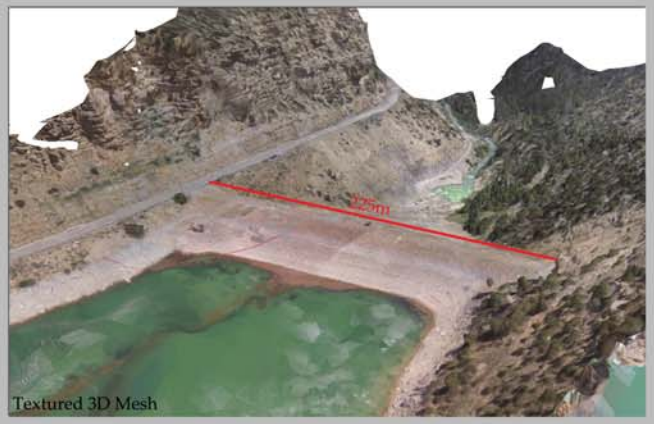
3D Reconstruction

3D Point Cloud



Joe's Valley Reservoir

Change Detection

Flight One

Flight Two

Huntington Creek Canal

Scan For Video

Software

Flight Planning: Matlab / Virtual Cockpit
Flight Optimization: Matlab
3D Reconstruction: Visual SfM, CMPMVS

Conclusions

Our preliminary work has shown that UAV systems have the potential to be an efficient, cost effective solution for monitoring dams, levees, canals, and other infrastructure systems. In our initial tests we were able to successfully construct baseline models that will be used as references for future change detection testing.

Future Work

- Alternative platforms (hexacopter, quadcopter etc.).
- Additional sensors (IR, thermal)
- Flight Optimization
- Real time detection of infrastructure anomalies.

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