Comparative 3D Sensor Initial Tests

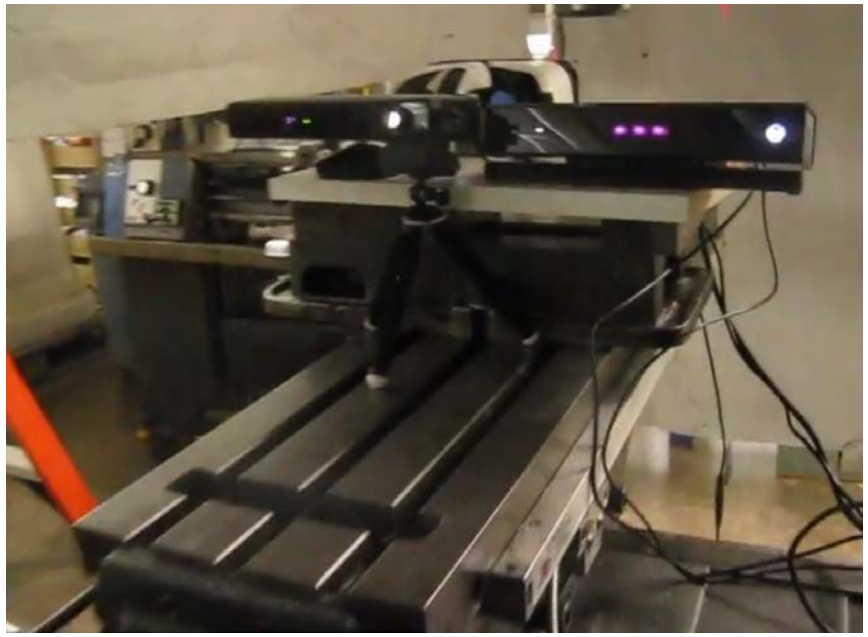
John Benac

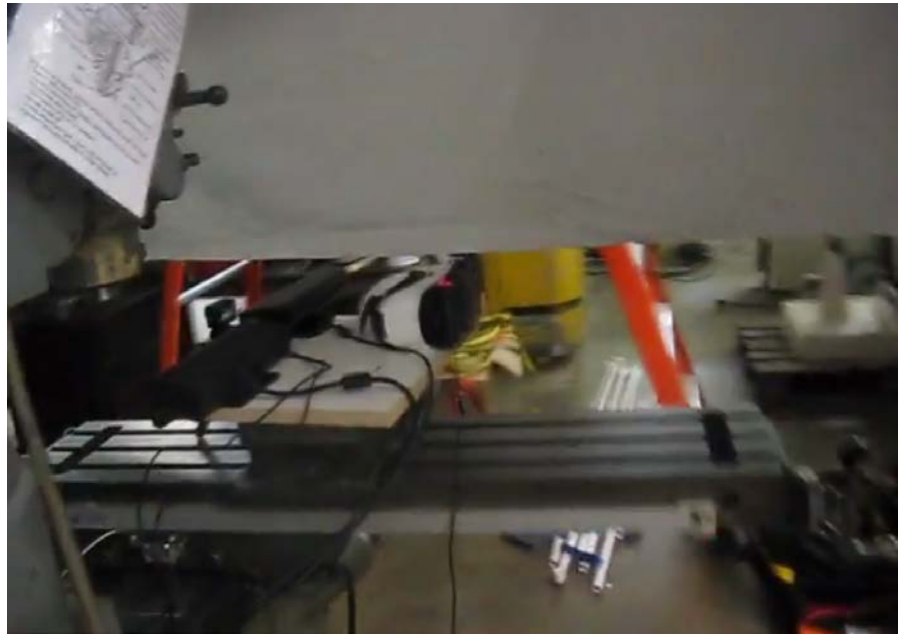
281 532 5205

john@bluegimbal.com

Correlated Data Set Testing

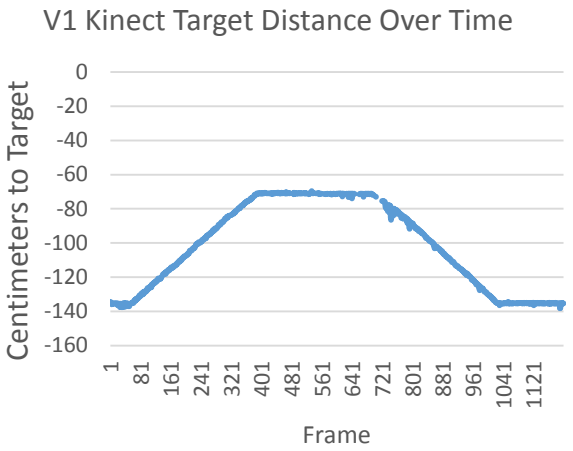
- 4 kinds of 3D sensors tested simultaneously
- Platform translates 26 inches in one direction
- youtube.com/watch?v=KXMOGc4Lrug

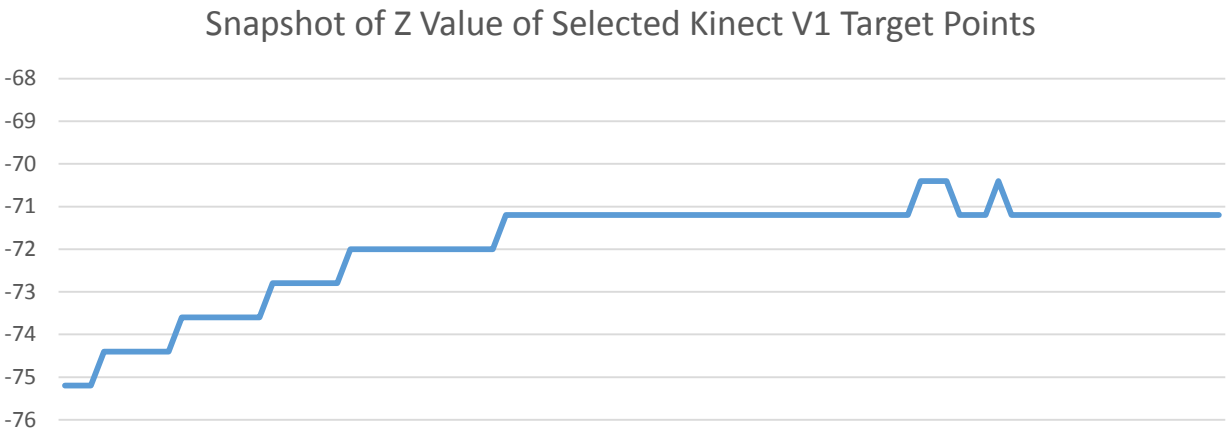




V1 (XBOX 360) Kinect: Structured Light

- Z depth measurements are only in 8 mm increments.

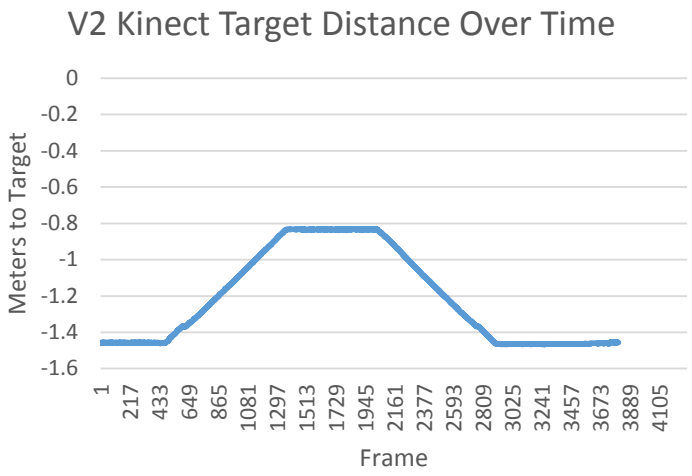


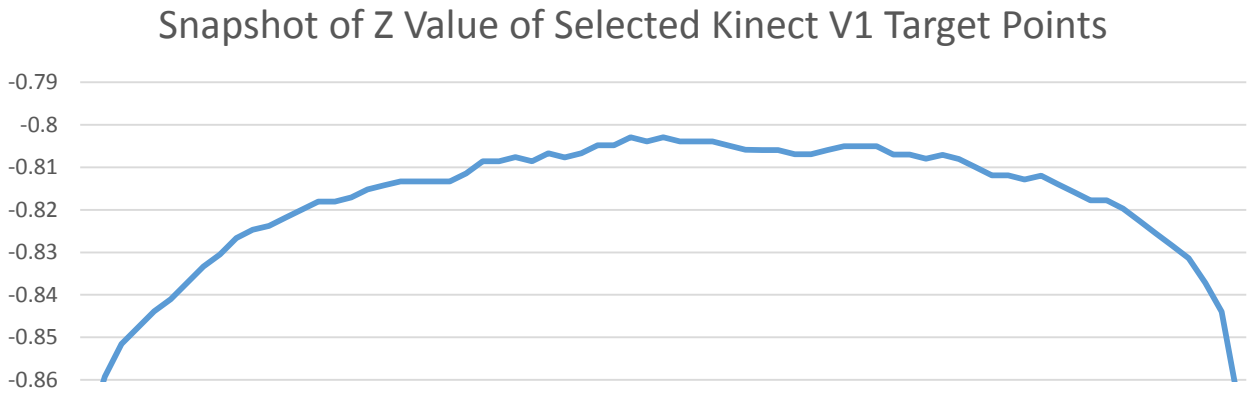


Ball slicing at coarse z values clearly shown on right

V2 (XBOX One) Kinect: Time of Flight

- Higher Sample rate, denser mesh, finer detail than V1 Kinect

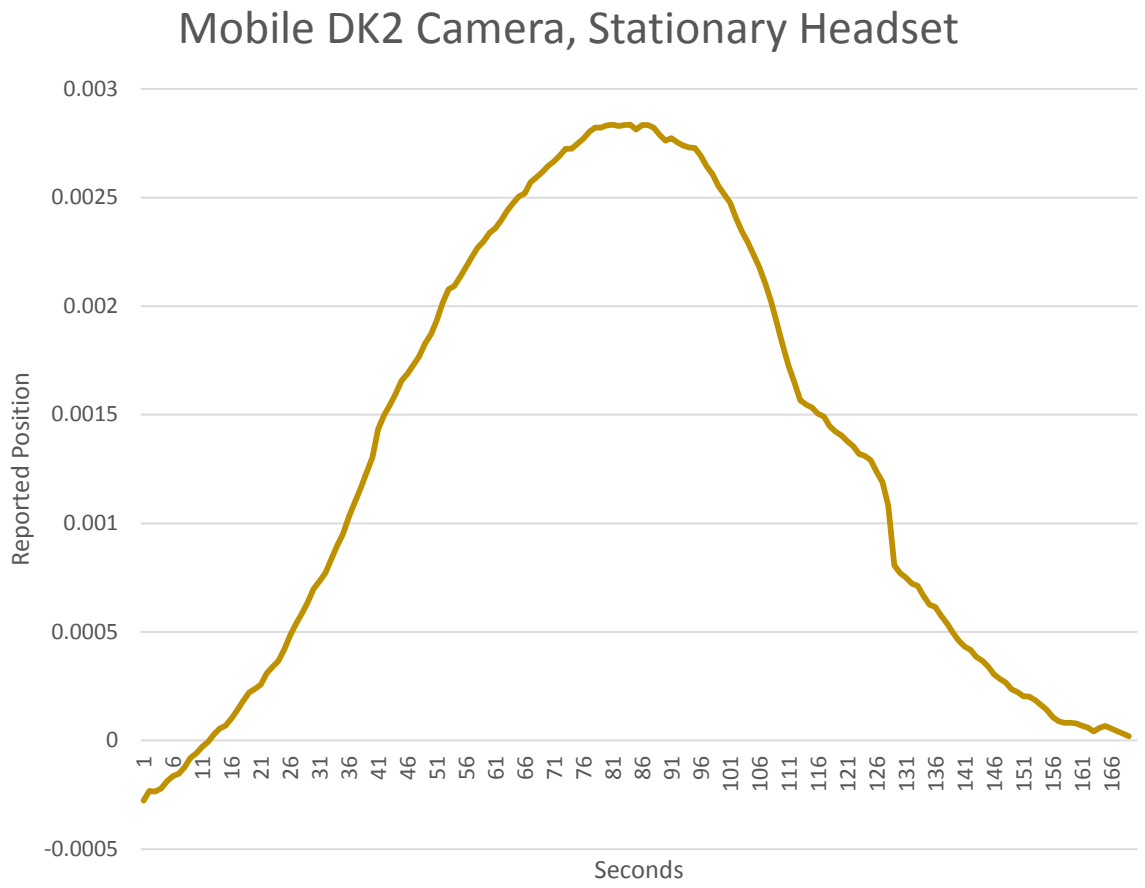




Target points are smoother and more detailed

DK2: IR tracking fusion with IMU

- The DK2 system uses the IR tracker and fuses that external reference with the low latency, highly sensitive IMU data.
- The falsely static IMU reading may drive the irregularity of the reported position



BlueGimbal Parallax Positioner

- The response is not linear, and the curve may be fit to a model relating the pixels to the distance
- 300 pixels over 26 inches gives approximately 2.2 mm sensitivity over the 30 inch to 5 ft range.