Real-time Video Mosaicking using Feature Point Correspondence

Aim: Improving situational awareness of the viewer by addressing aperture limitations, level of scene detail and information contextualization.


Image alignment performed by on-line frame-wise and global bundle adjustment supported by hardware accelerated visualization with quality enhancements and explicit task parallelism on modern CPU hardware.

Mosaic constructed solely from the input video with no additional camera meta-data.

Performance supported by novel use frame sieve to avoid high data redundancy and realisation of real-time inter-frame blending.

Combined gain correction and single band-blending facilitates inter-frame “seam” removal [3].

Results

Conclusions & Future Work

Real-time video mosaicing is achievable within acceptable time bounds using a feature-driven approach.

Future work will investigate multiple camera inputs with varying spectral sensing.