Docket #: S15-138

Doppler Time-of-Flight

Stanford researchers have developed a camera technology that performs range and velocity measurement in a per-pixel manner offering a fundamentally new imaging modality with existing consumer time of flight camera hardware. Additionally, color, depth and velocity information are captured simultaneously, which allows for a full 3D metric of a scene. More information can be found at SIGGRAPH 2015 Doppler Time-of-Flight Imaging.

Applications

- The proposed technique has applications in many computer graphics and visions problems such as motion tracking, segmentation, recognition and motion deblurring. It can be especially useful for navigation of autonomous vehicles, human computer interaction techniques (such as in gaming), sports and consumer photography.

Advantages

- Currently the most related techniques are lidar and radar. This technique enhances inexpensive consumer time-of-flight cameras with capabilities that currently only expensive lidar and radar systems offer. Additionally, compared to the point-by-point scans of lidar and radar systems, this technique captures depth and radial velocity per pixel.

Patents

- Published Application: 20190154834

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