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(54) Title: DRIFT CORRECTION AND OPTICAL-INERTIAL SENSOR DATA FUSION FOR VIRTUAL REALITY

(57) Abstract: Method and system for improving accuracy and reducing latency when calculating user position data and correcting for drift in virtual and/or augmented reality systems realized using head-mounted displays (HMDs). An optical motion capture system consists of a plurality of stationary cameras that track a device on board a head mounted display (HMD). Position and orientation data are obtained from the optical motion capture system, and rotation (yaw) data is obtained and derived from a sensor on-board the HMD, which captures full rotational data. In embodiments, only the yaw component of the full rotational data is used for space-matching, wherein other portions of the full rotational data is not necessary for space-matching purposes, which significantly reduces time-sensitive processing complexities. Drift correction is made while the user is moving their head to mitigate visual discontinuities



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