A Bayesian Sensor Fusion Scheme for Attitude Tracking

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Abstract—**Accurate attitude tracking is a vital process in AR/VR applications. To satisfy its stringent requirement, multiple types of sensors, such as IMU and vision sensors, must cooperate, as each type of sensors has its own set of advantages complementing each other. However, fusion of different types of sensors is not a trivial task. We have previously proposed an attitude tracking algorithm using an IMU, which belongs to the category of recursive Bayesian filtering. In this paper, we propose a both theoretically reasonable and practically useful sensor fusion scheme based on Bayesian statistics, to extend and complement our previous algorithm. Implementation of our scheme for an AR application is also successfully done.**

Keyword—**AR (Augmented Reality), VR (Virtual Reality), HMD (Head Mounted Display), IMU (Inertial Measurement Unit), Attitude Tracking**

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