ABSTRACT

AUZI ASFARIAN. Augmented Reality Mobile Campus Tour in Bogor Agricultural University. Supervised by FIRMAN ARDIANSYAH.

Navigation is a complex problem that requires a set of skills and tools. Because of the complexity, a navigator will be more focused on the process and tools rather than their surrounding. This problem can be solved using augmented reality (AR), a derivation of virtual reality which augments real world with virtual objects. With AR, we can mark a real world location using virtual markers and put relevant information, which is automatically processed by a computer, of that location. This will simplify and reduce the effort of navigation process. Today, many smartphones have enough computing power to run an augmented reality application.

This research presents a prototype of augmented reality mobile campus tour in Bogor Agricultural University on Android smartphone. The application is able to give the user estimated bearing and distance of the locations relative to user’s current location. Distance and bearing are computed using Haversine formula to reduce the computation process. To reduce noise in accelerometer and magnetometer values, exponential smoothing is used with accelerometer smoothing factor = 0.2 and magnetometer smoothing factor = 0.5.

Keywords: android, augmented reality, IPB, navigation