

# PH.D. PRELIMINARY ORAL EXAMINATION

**Thursday, November 3<sup>rd</sup>  
11:00a.m. @ 223 Atanasoff**

**Thitivatr Patanasakpinyo**

Major Professors: Les Miller and Wallapak Tavanapong

**Flattening Methods for Adaptive Location-Based  
Software to Various User Abilities**

Individual spatial visualization has evidently been proved to be the important factor that impacts software usage performance, especially on location-based software, which currently becomes a major interesting trend in this ubiquitous computing era. Developing a solution that could enhance a location-based software to handle different users with various levels of spatial visualization abilities would yield great consequences in both software usability itself and user experience. In this dissertation proposal, we started by setting up an hypothesis with a goal to discover the factors that are the keys to help minimizing/flattening those differences, so, users with various spatial visualization abilities could generate a similar performance on the same software. Then, we have run application-involved experiments to verify our claim. An application related in this study is an address verification using location-based software on portable computing device, which is a professional task executed by US census bureau office.

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