

IST 045
**Sensory and Learning Infrastructure Combining Activity, Physical and Relational
Context to Enhance Performance**

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Abstract

Our goal is to build a smart infrastructure, consisting of mobile and wearable computers equipped with a novel learning system that can learn the user's current state and intentions by analyzing the data from many sources, including body-worn sensors. This knowledge of user state is known as context-awareness. By creating this smart infrastructure constructed from an array of sensor-rich, context-aware nodes, we will provide the basis for developing information technology products that interact symbiotically with users.

The proposed work on context-awareness will develop systems with appropriate sensors and actuators so that computing systems can be not only aware of their surroundings but also to act in a manner appropriate to those surroundings. We will employ theory from social science and cognitive science to strengthen our computational models and reasoning strategies.