

Embedded Intelligence from Home to Urban Spaces

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Our vision is transparent and everywhere available computing system. This is realized in smart environments with embedded and wearable computing devices. Our aim is human context recognition and natural human-computer interaction with novel and practical sensor solutions.

We have studied human context recognition utilizing wearable sensors and fixed sensors embedded in environment. Wearable sensors we have used mostly to recognize human activities. As an environmental sensor we mainly have used two different types of pressure-sensitive floor sensors which have been used to study person identification based on kernel methods and a novel multiple classifier system along with features calculated to capture walking styles of different persons. More recently in association with Tokyo University of Agriculture and Technology, we have been developing an interactive context-aware sensor-based feedback and control system to support energy efficient housing. The aim of the system is to motivate inhabitants to be aware of their energy consumption habits and make decreasing energy costs easier. In this talk some of our work on human activity research is introduced. We think that these are the steps required to provide our environment even more human friendly.

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