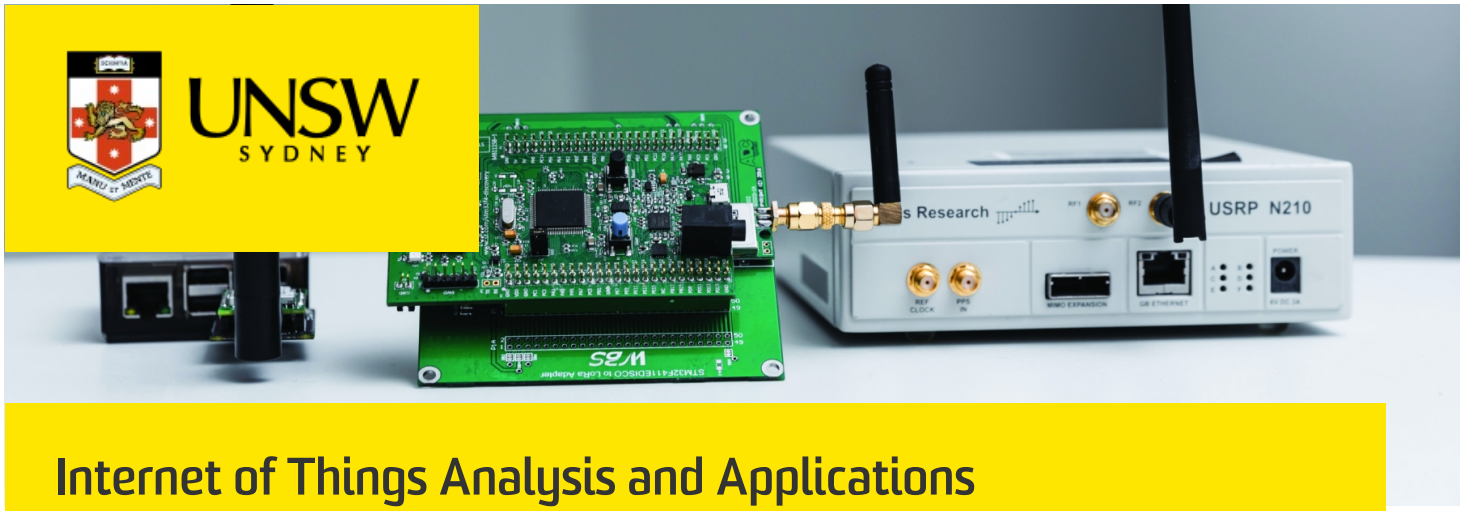

Internet of Things Analysis and Applications

The Internet of Things (IoT) presents enormous opportunities to improve interaction with our immediate surroundings. Fully realising this potential requires sophisticated information analysis, with a focus on data mining and deep learning, human activity recognition, information filtering, and brain computer interfaces.

Competitive advantage

- Predictive human behaviour modelling—covert human activity recognition and indoor human movement tracking
- Brain computer interface—deep learning for decoding brain activities and enabling device control via brain signals
- Large-scale (1000+ sensors), long-term industry system deployment experience in a variety of environments such as buildings, rainforest, farms and lakes

Impact

- Improved automation and better support in a complex environment
- Breakthrough technology outcomes realised through sensor processing, including advances in biometric (face, gait) recognition and wearable systems

Successful applications

- Deep learning for fault detection and localisation in distributed systems, CERA Project
- Opinion fraud detection
- Thing-of-interest recommendation in the Internet of Things
- Human abnormal activity detection
- Smart buildings and environments
- User-friendly authentication for wearable devices, Australia Centre for Cybersecurity
- Battery-free wearable systems
- Capabilities and facilities
- LPWAN test-bed in an industrial building
- GPU-accelerated IoT data analytical platform

More Information

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