

## Department of Electrical and Computer Engineering

Title: “**Wireless Patient Monitoring: challenges and some solutions**”

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**Room ΠΤΕΠ E116, Old Campus**

**University of Cyprus**

### **Abstract:**

Advances in wireless sensing and communications infrastructure have allowed the widespread development of prototype medical devices for patient monitoring. However, such devices have still not found their way into widespread clinical use, primarily due to lack of research into intelligent analysis methods that are sufficiently robust to support large-scale deployment. Existing systems are plagued by large false-alarm rates, limited battery life, the size and weight of the devices as well as the inability to cope with sensor artifact in a principled manner. In this talk, I will present a way of identifying invalid data obtained from wearable sensors, via a Signal Quality Index (SQI). I will then present two applications of the SQI, demonstrating how incorporating it into intelligent recording schemes can help significantly reduce the battery life of the sensors and the quality of the vital sign estimates obtained.

### **Biography:**

Christina Orphanidou has an MEng degree from Imperial College, London, and MSc and DPhil (PhD) degrees in Applied Mathematics and Information Engineering from the University of Oxford, UK. After completing her DPhil, she moved to the Institute of Biomedical Engineering in the department of Engineering Science, University of Oxford, where she was the Senior Research Associate in the “Hospital of the Future” project, investigating vital sign monitoring of ambulatory hospital patients and the use of predictive modelling for identifying patient deterioration. During her research career she received the “Best Young Investigator in Acoustics” award by the Acoustical Society of America (ASA) as well as the Young Investigator award by the International Speech Communication Association (ISCA). While in Oxford, she also held Adjunct Lecturer posts at the Oxford Centre for Industrial and Applied Mathematics, the Department of Engineering Science and the Institute of Biomedical Engineering. In 2013, she founded Oxygen Research Ltd, an e-health and m-health consulting firm. In parallel, she works as a Special Scientist in the Department of Electrical and Computer Engineering, University of Cyprus.