

RESEARCH STUDENT SEMINAR

Thursday 23 November 2017
11:00 – 12:00

**SEERC Conference Room,
Proxenou Koromila Building**

“Emergent Distributed Systems for Computational Auditory Scene Analysis”

By
Mr Pappas Dimitris,
PhD student
Computer Science Department, TUoS

ABSTRACT

Computational Auditory Scene Analysis (CASA) is the study of the human auditory system using computational means, specifically how it organises sound into perceptually meaningful elements. CASA (machine listening) systems, essentially aspire to separate mixtures of sound sources into individual sound sources, based on findings from assorted disciplines such as neuroscience and biology. These systems find important applications such as hearing prostheses, robust automatic speech and speaker recognition, and auditory scene reconstruction. With the continuous technological advancements in robotics, mobile sensors and smart devices, a realm of possibilities for new CASA applications is open for exploration. This study aims to use bio-inspired Emergence as a navigation tool, which is the design of adaptive and optimised complex systems in a macroscopic level through the implementation of microscopic properties in their components. The current focus is on the optimisation of energy management and movement strategies of mobile devices tracking sound sources within noisy environments, inspired by treefrog biology, with future efforts introducing more low-level properties and component interaction models from other animals that can produce desirable high-level properties to harness for efficient CASA applications.

The seminar series is open to all members of *staff* and *students* of CITY and to any *externals* that wish to attend.