

OPEN SEMINAR SERIES

Tuesday 4 March 2014
16:00 – 17:00

Multi-Purpose Room 5th floor, L.Sofou Bldg

“Modelling, specification and verification. Why do we need them? ”

By
Dr. Marian Gheorghe
Dept. of Computer Science,
University of Sheffield

ABSTRACT

Modelling is an important part of any computational approach. Formal models, dealing either with different types and sizes of data as well as with the behaviour of various systems, represent a special class of computational models, widely used nowadays in specifying and analysing systems of different levels of complexity.

This talk will illustrate the use of some more established computing paradigms like, (extended) finite automata and Petri nets, as well as of some newer formalisms, like membrane systems, for modelling different engineering problems in natural or artificial systems. The presentation is aimed at showing the benefits of using these approaches in designing domain specific languages in areas, like biology and economy, or for building adequate tools. The need of providing more powerful and diverse methods for analysing complex systems leads to approaches that complement these models with formal verification procedures which increase the confidence in using the models and the tools, and provide ways of deepening the knowledge regarding the behaviour of these systems. Some formal verification methods based on model checkers, like Spin and PRISM, will be utilised in the context of our applications in order to show their capabilities in providing a better understanding of the systems investigated. Some examples emerging from our recent projects will illustrate the approach and try to provide some answers to the question of "why do we need to combine modelling, specification and verification?".

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



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