

## **Davetli Konuşma**

# **Formal Modelling in Software Design**

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**Abstract.** In a broad sense, computing is an area of knowledge from which a popular and effective technology emerged long before a solid, specific, scientific methodology, let alone formal foundations, had been put forward. This might explain some of the weaknesses in the software industry, on the one hand, as well as an excessively technology-oriented view which dominates computer science training at pre-university and even undergraduate teaching, on the other. Modelling, understood as the ability to choose the right abstractions for a problem domain, is consensually recognised as essential for the development of true engineering skills in this area, as it is in all other engineering disciplines. But, how can the basic problem-solving strategy one gets used to from school physics (understand the problem, build a mathematical model, reason within the model, calculate a solution), be taken as the standard way of dealing with software design problems? The talk will address this question, illustrating and discussing the interplay between modelling and reasoning in software design and architecture.

### **Biography**

Luís Soares Barbosa <http://www.di.uminho.pt/~lsb> is an Associate Professor at the Department of Informatics of the University of Minho, Portugal, and a senior researcher of the High Assurance Software Laboratory at INESC TEC. Currently funded research interests include formal models for software components and architectures; hybrid systems; and coalgebraic semantics. In these areas he coordinated several research projects, bilateral partnerships with Brasil and China, and served as the portuguese coordinator for the LerNet ALFA network with Latin America. A member of IFIP WG 1.3 (Foundations of Systems Specification), he lectured in MSc and PhD programmes at the Universities of Bristol (UK), Tartu (Estonia) and Beijing (China). He is the current director of MAP-i, the Joint Doctoral Programme in Computer Science of the Universities of Minho, Aveiro and Porto.