

Distinguished Lecturer Series “Leon the Mathematician” at the Department of Informatics, Aristotle University of Thessaloniki Greece (<http://dls.csd.auth.gr>)



CELEBRATING
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YEARS

INVITED LECTURE

Professor Joseph Sifakis (École Polytechnique Fédérale de Lausanne, Switzerland and Verimag Laboratory, France), the 2007 ACM Turing Award recipient, is going to lecture on

“From Programs to Systems – Building a Smarter World”

at the **Auditorium II of Aristotle University Research Dissemination Center – ΚΕΔΕΑ ΑΠΘ** (September 3rd Ave., University Campus) on **Friday May 4th, 2012** at **12:00**.

ABSTRACT

Modern computing systems break with traditional systems such as desktop computers and servers, in various ways: 1) they are instrumented in order to interact with physical environments; 2) they are interconnected to allow interaction between people and objects in entirely new modes; 3) they must be smart to ensure predictability of events and optimal use of resources. Currently, we lack theory methods and tools for building cost-effectively trustworthy systems.

In this talk, I will discuss the evolution of Computer Science driven by the exponential progress in technology and the explosion of applications, and in particular its shift of focus from programs to systems. I will show how modern computing systems challenge our capabilities for ensuring their trustworthiness. I will advocate for a coherent scientific foundation of system design and present a vision for its development in three work directions: 1) Linking the cyber and the physical worlds; 2) Correctness-by-construction; 3) Adaptivity.

The talk will conclude with general remarks about the nature of Computer Science as a scientific discipline in its own right, and advocate for a deeper interaction and cross-fertilization with other more mature disciplines.

ABOUT THE SPEAKER:

Professor **Joseph Sifakis**

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Joseph Sifakis studied Electrical Engineering at the Technical University of Athens and Computer Science at the University of Grenoble. He is recognized for his pioneering work on embedded system design and verification. He contributed to the emergence of the area of model-checking, currently the most widely used verification method in industry. His current research focuses on rigorous system design and correct-by-construction techniques. Joseph Sifakis has a broad industry experience, notably through participation in a large number of industrial projects and consulting.

Awards and distinctions: Turing Award 2007, CNRS Silver Medal 2001, Member of the French Academy of Sciences, of the French Academy of Engineering and of Academia Europea, Grand Officer of the French National Order of Merit, Commander of the Legion of Honour.

