



## INVITED LECTURE

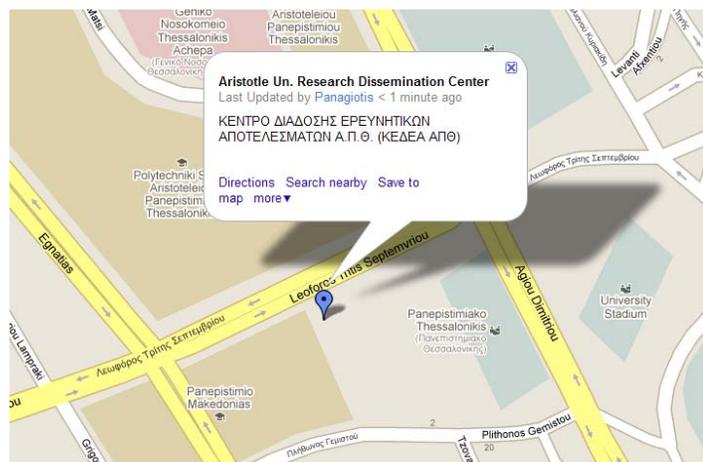
**Dr Dimitra Giannakopoulou**, senior researcher at the NASA Ames Research Center, in CA, USA, is going to give a lecture on:

### **“State Space Exploration for NASA’s Safety Critical Systems”**

at the **Auditorium III of Aristotle Un. Research Dissemination Center – ΚΕΔΕΑ ΑΠΘ\*** (September 3<sup>rd</sup> Avenue, University Campus) on **Tuesday June 28<sup>th</sup>, 2011 at 13:00.**

## **ABSTRACT**

The safety-critical nature of NASA applications requires advanced verification techniques to assist and complement traditional testing. This talk will focus on compositional verification, a divide-and-conquer technique that aims at increasing the scalability of advanced verification techniques such as model checking by exploiting a system’s structure into components. We will present seminal work by the Robust Software Engineering Group at NASA Ames on automating compositional verification through the use of the L\* learning algorithm, and will discuss the application of this work to a number of NASA systems. Finally, we will present current challenges and future directions.



## About the Speaker:

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Dr. Dimitra Giannakopoulou is a senior research scientist with the Robust Software Engineering Group at the NASA Ames Research Center. Her research focuses on scalable specification and verification techniques for NASA systems. She is interested in incremental and compositional model checking based on software components and architectures. Recently, she has also been investigating test-case generation techniques for aerospace systems as well as the application of formal methods to human automation interaction systems. She is co-recipient of an ACM distinguished paper award and of the FLC 2009 “Outstanding Technology Development Award” for the Java PathFinder model checking framework. She is associate editor for IEEE Transactions on Software Engineering, co-editor of two special journal issues on Compositional Verification, and has given tutorials and invited lectures / keynote talks at international conferences and summer schools. Dr Giannakopoulou co-chaired the program committees of the following conferences: NFM 2009 (NASA Formal Methods Symposium), ETAPS/FASE 2011 (European Joint Conferences on Theory and Practice of Software / Fundamental Approaches to Software Engineering) and is co-chairing FM 2012 (18<sup>th</sup> International Symposium on Formal Methods). She received her Ph.D. and MSc with Distinction from Imperial College, University of London, and her Engineering degree from the Computer Engineering and Informatics Dept. of the University of Patras, Greece.