



**ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΥΠΡΟΥ  
ΤΜΗΜΑ ΠΛΗΡΟΦΟΡΙΚΗΣ**

**ΠΑΡΟΥΣΙΑΣΗ  
ΔΙΔΑΚΤΟΡΙΚΗΣ ΔΙΑΤΡΙΒΗΣ**

Προσκαλείστε στην παρουσίαση της Διδακτορικής  
Διατριβής του Μεταπτυχιακού Φοιτητή  
Νέαρχου Πασπαλλή

με τίτλο:

«Middleware-based Development of Context-aware  
Applications with Reusable Components»

Η παρουσίαση θα γίνει την  
Τετάρτη, 30 Σεπτεμβρίου 2009, στις 10:00 π.μ.  
στην Αίθουσα 148, στην Πανεπιστημιούπολη.

Η παρουσίαση είναι ανοικτή στο κοινό.



**UNIVERSITY OF CYPRUS  
DEPARTMENT OF COMPUTER SCIENCE**

**PHD DEFENSE  
PRESENTATION**

You are cordially invited to attend the PhD Defense  
Presentation of Nearchos Paspallis

titled:

«Middleware-based Development of Context-aware  
Applications with Reusable Components»

The presentation will take place  
on Wednesday, September 30<sup>th</sup>, 2009, at 10:00 a.m.  
in Room 148, at the University of Cyprus (new campus).

The presentation is open to the public.

**Nearchos Paspallis**  
**University of Cyprus, 2009**

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### **Abstract**

Driven by the proliferation of mobile and pervasive computing, there is a growing demand for context-aware, self-adaptive applications. Such applications benefit users by dynamically adjusting their offered services to the highly dynamic context which characterizes mobile and pervasive computing environments. To achieve this kind of sophistication, however, such applications must be capable of sensing the context, and autonomously reacting upon their knowledge on it. However, enabling this kind of behavior inevitably results in a measurable increase to the complexity of the underlying software.

This presentation discusses the challenges in developing context-aware software and compiles an extensive list of requirements that need to be addressed. It then proposes a component-based development approach that facilitates reusability and eases the task of designing and implementing context-aware applications using separation-of-concerns. The development methodology is extended with a Model-driven development approach and is supported by a pluggable and modular middleware architecture which optimizes the resource consumption in run-time. The proposed approach is evaluated both quantitatively and qualitatively.

### **Short Bio**

Nearchos Paspallis is a PhD Candidate at the Department of Computer Science, University of Cyprus. He received an MSc in Computer Science from the University of California, Santa Barbara, and a BSc in Computer Engineering and Informatics from the University of Patras.