

First Prometidos Summer School

Madrid, 19-21 September

PROMETIDOS-CM (*Madrid Program in Rigorous Methods for the Development of Software*) is a R+D program funded by the regional government of Madrid, Spain, that involves some leading research groups in Computer Science in the region (IMDEA-Software, CLIP-UPM, BABEL-UPM, FADOSS-UCM, GPD-UCM). The scientific interests of PROMETIDOS-CM cover all aspects of development of software based on modular, scalable and realistic rigorous methods.

One of the strategic purposes of PROMETIDOS-CM is the realization of effective training actions to introduce young post-graduate and PhD students in the research area of rigorous methods. The announced Summer School attempts to be a contribution in this sense.

Elvira Albert

Test Case Generation and Cost Analysis in Java-like Languages

The course will focus on two topics which are often not related: (1) resource analysis and (2) test-case generation. As regards (1), the classical approach to static cost analysis consists of two phases: In the first one the program is translated into a set of recurrence relations; and in the second phase they are solved into closed-form upper/lower bounds. In this presentation we will discuss the main techniques used to generate cost relations in Java-like languages, depending on the nature of cost we are interested in approximating. We will also see the methods used for solving them into closed form bounds. As regards (2), we will study an approach to test case generation based on symbolic execution. The course will finish by relating the two techniques, namely by explaining how resource analysis can be used to guide the process of finding interesting test cases.

Elvira Albert is an Associate Professor at UCM since 2002. She has previously held positions at the Technical University of Valencia, where she received a Ph.D. in Computer Science in 2001. Elvira has been PC member at more than thirty international conferences (including major conferences like SAS, ISMM, LPAR, etc.), been conference chair of PPDP'08 and Bytecode'09 and belongs to the steering committee of PPDP. Her research interests include static and dynamic analyses, with special focus on resource consumption properties. She is author of more than 70 publications in international journals and volumes strongly related to the topics of the course.'