

## **Final Report on the Faculty Exchange Program at Carnegie Mellon University – Fall 2012**

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This report provides a summary of the activities accomplished during my professional stay at Carnegie Mellon University (CMU), which took place in the period of October 31 to December 14, 2012. I was hosted by Prof. David Garlan, at the Institute for Software Research (ISR) of the School of Computer Science (SCS), CMU.

When I originally planned this visit at CMU I had two main goals: (1) Follow one or more courses from the Professional Masters of Software Engineering to have a better understand of the dynamics of these courses and programs; and (2) to develop a professional relationship with faculties and researchers that can lead to join participation in future research projects and eventually co-supervise PhD students.

Regarding the first goal, I had the opportunity to follow two courses from the MSE (Master in Software Engineering), that I was particularly interested on. The first course was "Models of Software Development", taught by Prof. David Garlan, with a strong emphasis on formal methods and languages (such as FSP (Finite State Processes), Z, Petri Nets, UML/OCL). The second course was "Managing Software Development", taught by Prof. David Root and Prof. Eduardo Miranda, with an emphasis in IT Project Management. Both are related to courses that I have teaching in my University, but both discussed and taught from different perspectives. I also had the opportunity to meet and talk with several MSE' s faculties and students and participated in some MSE meetings and academic events which give me a broad vision and understanding of its dynamics.

Concerning the second goal, I had the opportunity to meet several faculties, researchers and PhD students in the context of the SCS/CMU and SEI (Software Engineering Institute)/CMU. From these different contacts, I'd like to mention the interaction with Prof. David Garlan and his research group, namely the opportunity to participate in the weekly meetings of the Software Research Seminar and the ABLE groups. I gave the talk "RSLingo: An Information Extraction Approach toward Formal Requirements Specifications" on November 9th at the ABLE meeting and received some relevant feedback. I'd like to mention the particular interaction and sharing of ideas with Prof. Travis Breaux (from SCS), Dr. Grace Lewis and Dr. Ipek Ozkaya (from SEI). From all these different interactions I was challenged to research related subjects, such as software architecture description languages, self-healing systems, architecturally significant requirements, quality attribute scenarios, or quantitative approaches to architecture design decision making.



During this period I still kept some managing duties at my University and supervised my MSc and PhD students, in particular David Ferreira and Luis Sousa by discussing the development of their PhD dissertations and by preparing some papers together.

This period was also a great time from the social and cultural point of view, having meeting friendly people and discovering nice places here in Pittsburgh. Also a particular reference to the informal contact with the Portuguese faculty members and PhD students that I met here at CMU.

Finally, I am very grateful to the Portuguese Foundation for Science and Technology, Carnegie Mellon University and the Carnegie Mellon Portugal program for supporting my visit at CMU.

Pittsburgh, December 14, 2012

Alberto Rodrigues da Silva