

## **CMU | Portugal**

### **Undergraduate Internships Program Report – Summer 2014**

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In this report I summarize my activities at Carnegie Mellon University (CMU) during the Undergraduate Internships Program, which took place from July 21 to September 12, 2014.

My host at CMU was Professor David Garlan. I worked with him and the ABLE group at the Institute for Software Research (ISR) with the goal of continuing their work on time/fidelity trade-off models for end user compositions. In particular, I worked on four problems: (1) generalizing the model for arbitrary topology and different architecture styles; (2) substituting abstract components with sub-architectures; (3) finding the best architecture according to a quality when given the desired fidelities; (4) explore the reverse problem, i.e., finding fidelities given a desired architecture quality.

I found the project to be very interesting and was able to complete the goals that I was proposed. I am now in the process of writing a technical report describing the work done, the problems faced and the solutions found along with possible alternatives.

During my stay, I met other researchers at ISR, namely Bradley Schmerl, Ivan Ruchkin and Vishal Dwivedi. Working with them and with Professor David Garlan was a very valuable learning experience and I look forward to collaborating with them again in the future.

I also had the opportunity to establish closer contacts with other young researchers from Portugal: Mariana Oliveira from FCUP, Albert Linde from FCTUNL, and Salomé Azevedo from CLSBE. Similarly, I also met Pedro Furtado, Assistant Professor with Universidade de Coimbra.

Finally, I was very impressed with the city of Pittsburgh and was glad to have the chance to see many of its attractions as well as meeting many nice people from different cultures.

In conclusion, this internship was very valuable for me, not only as a learning experience but socially and culturally as well.

Porto, September 26, 2014

Tiago Bluemel Cardoso