Sérgio Pequito Receives Two Awards at CMU

Sérgio Pequito is a Portuguese student that is carrying out his dual degree Ph.D. in Electrical and Computer Engineering (ECE) at Instituto Superior Técnico of the Universidade Técnica de Lisboa and Carnegie Mellon University, in the scope of the Carnegie Mellon Portugal program. On May 20, 2012, Pequito received the Carnegie Mellon University’s ECE Outstanding Teaching Assistant Award. On April 5, 2012, he received an Honorable Mention (2nd place) of the 2012 CMU Graduate Student Teaching Award competition, funded by the Eberly center, graduate student association and the Provost.

The Carnegie Mellon University’s Graduate Student Teaching Award is given annually to recognize a graduate student who has demonstrated exemplary teaching. The goal is to foster a culture of teaching excellence among graduate Teaching Assistants (TAs) and instructors. Pequito’s nomination was the result of several letters written by undergraduates and graduates grateful for his explanations, detailed lecture notes, and his respectful and caring attitude toward students.

We spoke with Sérgio Pequito about these two achievements, the challenges of being a TA, and about his expectations for the future.

Carnegie Mellon Portugal Program: In April you received an honorable mention (2nd place) of the CMU Graduate Student Teaching Award and on May 20 you achieved the ECE Outstanding Teaching Assistant Award. How do you feel with these two distinctions?
Sérgio Pequito (SP): It is a honor to be distinguished with such awards, the least I can say is that it was an extraordinary experience to which several people contributed to: it was a mix of open minded responsible professors that allowed me to introduce some novelty in the course and the awesome students/colleagues I
had the pleasure to work with throughout the semester.

CMU Portugal: Most of the students which wrote a letter about you as a teacher assistant (TA), said that you were able to explain several boring issues in a very interesting way. What is your secret?

SP: I can say there are several secrets. First, teaching methodologies at CMU are different from those in European universities I have been enrolled in the past. At CMU usually one begins with applications and motivations after the common ground is explored and the theory presented. On the other hand, such approach might not be suitable for more abstract/theoretical courses; the trick was to mix both European and American methodologies to fulfill the diversity of students present in the classroom, by trial and error. In addition, I was producing some lecture notes for the students to get the material covered in the class in an organized fashion. I also added further details and examples to compensate for lack of background or limited time to explain a difficult topic. Finally, it is my belief that the TA cannot be understood as "the grader", but rather as the colleague that is there to help, in order to achieve that throughout the semester I brought some cakes and chocolates in weeks that students seemed to be overwhelmed with coursework. Occasionally I also tried to bring to the class some humor and making jokes about real life examples where the theory given in class was mislead. I also challenged them with hard problems to get them to experience the difficulties by themselves. It was the best of times, it was the worst of times... but we all learn with each other, and this is most likely the most important point, there was no entity that carries all the knowledge and delivers it afterwards, we are all willing to learn!

CMU Portugal: Could you please explain what is the role of a TA at CMU? Is it different from being a TA in Portugal?

SP: It varies from course to course but in general consists in creating weekly homeworks and its written solutions, grading them, helping to prepare the midterms and finals and its solutions (as well as grading), preparing lab assignments and helping in the labs, give recitations (the equivalent to practical class or wrap up course content), give 2h office hours every week and finally cover some lectures while the responsible professor is not on campus. In Portugal (my experience is resumed to IST – Math department), the concept of TA (aka “Monitor”) is different. TAs help grading the midterms and finals and do several classes (2/3 for 2h) per week where they solve exercises. In the ECE department at IST the concept of TA is recent, it is my personal belief that it tries to borrow ideas from the TAing at CMU, I think it is one of the impacts of the CMU-Portugal program. Let’s hope that professors and institutional rules allow the TAs to be innovative and to reinvent the meaning of teaching by reinforcing the link between students and the course.

CMU Portugal: You are now carrying out your Ph.D., What do you intend to do in the near future?

SP: That is a difficult question to answer. First, I have personal goals concerning the Ph.d. itself, I would like to tackle relevant problems that are likely to make impact in my field of research. After that both teaching and working in a company are viable options, I like to think that I can postpone the decision for at least one more year. Then I will apply for both companies and universities and hope to hear from them. At that time, depending on the offers I receive I will make a decision.

More information available at http://www.cmu.edu/graduate/professional-development/innovation-with-impact/index.html
“Today it is Fundamental to Experience Mobility and to Work in Network”

These words were uttered by José Machado da Silva, associate professor of the Faculdade de Engenharia of the Universidade do Porto (FEUP) and senior researcher at INESC TEC. Machado da Silva was at Carnegie Mellon University from February 12 to May 12, 2012, as a faculty exchange member, in the scope of the Carnegie Mellon Portugal Program.

During this visit, Machado da Silva had the opportunity to carry out teaching and research activities, in both cases “addressing the domain of design and testing of analog and mixed-signal microelectronic circuits,” he said. Machado da Silva was hosted by Shawn Blanton, professor at the Center for Silicon Systems Implementation, department of Electrical and Computer Engineering at Carnegie Mellon University (CMU).

With reference to teaching, Machado da Silva considers that “it was a rewarding experience seeing the effort dedicated on preparing the lessons being recognized by the students, who manifested interest in the subjects and promoted further discussion in the class.” This associate professor identified “new contents, namely on the domain of submicron MOS transistors modeling, to be included in the course Analog Microelectronics of the Integrated Masters on Electrical and Computer Engineering at FEUP, as well as the introduction of CMU students to issues related to RF testing, a subject that was not initially foreseen in the course syllabus.”

The first involvement of Machado da Silva with the Carnegie Mellon Portugal Program occurred with the submission of a project prepared jointly with Carnegie Mellon colleagues to the CMU Portugal Call for Research Projects 2008. Currently, with this trip to Carnegie Mellon, Machado da Silva was able “to prepare future collaboration on research projects and students’ supervision.”

Importance of this Experience

Machado da Silva explained “during my career I had also the opportunity of visiting and working with colleagues in different European universities.” Therefore, he said “these experiences are always beneficial to know other realities and practices, as well as to help us to know better our own capabilities.” Today, particularly in the academic domain, it is fundamental to experience mobility and to work in network.

The main reasons that took Machado da Silva to become a faculty exchange member were “the accreditation of a course taught at FEUP to be included in CMU/FEUP joint programs, as well as, to promote joint research.”

National Director Successfully Completes the "Agregação"

João Barros, associate professor of Electrical and Computer Engineering at the Faculdade de Engenharia of the Universidade do Porto and national director of the Carnegie Mellon Portugal Program, was unanimously approved in his Habilitation ("Provas Públicas de Ageração") that were held on June 18 and 19, 2012 at the Faculdade de Engenharia of the Universidade do Porto (FEUP).

These included public discussion of João Barros’ curriculum vitae, a course proposal on Foundations of Communications, which Barros submitted half a year ago, and a presentation on "Physical Layer Security: From Information Theory to Security Engineering". The two days provided many opportunities for lively discussion among members of the Committee and the candidate.
In this paper, the authors address the problem of parsing natural language text, using methods of statistical inference. André Martins explains that “this is a difficult problem, since the natural languages are highly ambiguous and enable a wide variety of constructions.” The authors believe that the statistical methods are well suited to this problem because they are able to capture some of these linguistic phenomena automatically from corpora, but in their opinion this statistical methods are generally based on simplified models. Therefore, André Martins work “aims to fill this gap by building richer statistical models, without sacrificing the efficiency of parsing algorithms.”

**Why is this work important?** Well, the parsing of text is very relevant for applications such as text search, machine translation and information extraction. Many of these tools are used in a day-to-day basis, for example when looking for information on the Internet through a search engine. André Martins explains that “the automatic interpretation of a text also allows to organize and to retrieve information efficiently, with a response speed that surpasses humans.” In his opinion, “there is a huge technological potential in this area,” and the “advent of social networks introduces new problems for which these technologies may be relevant, such as media monitoring and analysis of opinion pieces.”

Through the Carnegie Mellon Portugal program, André Martins have had the opportunity to spend two years at Carnegie Mellon. “During this period I interacted with other students and faculty in the statistical learning and natural language processing natural fields, and I have learned a lot with them,” Martins says. About this experience, Martins misses the network spirit at CMU.

André Martins completed his Ph.D. in this academic year, 2011/2012, and is now part of the research team in Machine Learning of the company Priberam, which is a spin-off of the Instituto Superior Técnico of the Universidade Técnica de Lisboa (IST/UTL), in Portugal.