

Report: CMU-Portugal Faculty Exchange

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This visit was a success in many different aspects, which follow. The most important experience as a visiting faculty at CMU was to feel and to be part of the vibrant research environment that exists there.

Regular meetings with host faculty were critical in the process of understanding how the ECE Department at CMU works and to understand the research mechanism within the host faculty's group.

Technical discussions with host faculty and students were conducted with an emphasis on the joint CMU-Portugal project proposal submitted in November and expected to start during the visit if approved. Not knowing the project proposal result during the visit was actually counter-productive. Nonetheless the visit was beneficial to better understand and build on the different aspects of network management that are being addressed at Carnegie Mellon.

Teaching requirements were fulfilled by participating in class 18-345 – Introduction to Telecommunication Networks – and by teaching two special topics on Content Search and Content Distribution in computer networks in 18-345. It is always important to highlight the low teaching load of CMU faculty and the support of the Department to pay for teaching assistants. As a result of this activity I will be offering a graduate level course on Network Management at PDEEC, in sync with the similar course at CMU offered by Hyong Kim.

The vibrant research environment at CMU could be noticed in a number of aspects, for example: 1) large number of research talks every week, much more than what someone could feasibly attend; 2) availability by all faculty and researchers that I met with to discuss research interests and ideas, both theirs and mine; 3) high productivity, not necessarily with long working hours, focusing on the essential, leaving non-essentials out of the office, focusing on concrete rewards: publish papers and get project funding; 4) quality of students: unlike what happens in Portugal, top students from all over the world get refused at CMU, which raises the overall quality of research; 5) spaces designed for discussion of ideas: blackboards, lounges, etc.

The low teaching load in this semester and the vibrant research environment were enablers of an acceleration in scientific production, namely in bootstrapping research collaborations with Hyong Kim (CMU), João Xavier (IST), Jaime Cardoso (FEUP), and Pedro Ferreira (IST/CMU), in an increase in paper acceptance, and in the start of joint supervision of two CMU-Portugal PhD students.

I must also mention the organizational aspect of the ECE Department. The most striking aspect is that the Head of Department has a great deal of power but also responsibility. I believe this model is propagated down the hierarchy with a strong impact on productivity. For example, the cost structure is directly impacted on projects, so faculty must collect funding to cover those costs, which then gives them responsibility. Other organizational aspects are the Faculty Meeting where faculty are informed and discuss the major endeavors of the Department and the Graduate Review Meetings where all Faculty (or area subsets) discuss the progress of all PhD students in the Department.

“How to raise the world raking of my Department and University”: my suggestion is to focus on trying to keep a vibrant research environment. As for my research, I will continue collaboration with CMU faculty through joint students and research projects, as well as other partners in Portugal and abroad.