Information and Communications Technologies (ICT)
"Critical to future economic growth"

More than 200 members of the academic and business communities attended the first annual conference of the Carnegie Mellon|Portugal Partnership “Economy 3.0: Re-boot and Re-connect.”

The mission of the Carnegie Mellon|Portugal Partnership is to create new knowledge in key focused areas of information and communications technologies by means of cutting-edge research, world-class graduate education, and a close connection with Portuguese Industry, thus placing Portugal at the forefront of innovation.

The Carnegie Mellon|Portugal Partnership Conference’s welcome address was given by José Marques dos Santos, Rector of the University of Porto, who announced that the change of management of universities will promote their autonomy. The University of Porto was among the first to attain the status of Foundation in Portugal.
João Barros, National Director of ICTI@Portugal, emphasized the importance of a wide scientific debate about the role of ICT in shaping a new economic model following the current financial crisis. To this end, the leadership of the Partnership prepared a provisional strategic plan that is currently under discussion among scientists and industry professionals in Portugal and at Carnegie Mellon. This document shall be the basis for a new call for research project proposals that will open in the coming weeks. In the strategic plan, ICT focus areas are proposed in which Portugal can develop comparative advantages. These areas include: Next Generation Networks for High-Quality Trusted Services; Software Engineering for Large Scale Dependable Systems; Cyber-Physical Systems for Ambient Intelligence and Human-Centric Community; and Applied Mathematics. Public Policy and Entrepreneurship in High-Growth Areas appear as important complementary fields. Professor Barros noted that “Portugal already has, in these areas, research groups with international impact and dynamic companies with the capacity to transform the results of basic research in high-tech products with added value.” Examples include Portugal Telecom, Nokia Siemens Networks, Novabase, as well as BioDevices, Critical Software, Ndrive or OutSystems. At the end of the speech, João Barros affirmed that it is important to create space for a new generation of leaders, both in academia and in business, and ended by stating that: “This is the time for us to make a difference.”

The keynote speaker at the Conference was Marvin Sirbu, Professor of Engineering & Public Policy at Carnegie Mellon University. Professor Sirbu’s speech was a response to the question, “How can ICT help?” His answer touched upon major problems of our times such as global warming, energy efficiency and self reliance, environmental preservation, infrastructure lifetime, aging population and global competition, showing the many areas that ICT impacts.

“The Carnegie Mellon|Portugal partnership aims to create new models for interdisciplinary and international collaboration, new academic centers of excellence, and also new models for academy / industry collaboration.”

For Marvin Sirbu to go from invention to innovation is a very important step because “it is not enough to do good science & engineering.” The key is that “ideas must be translated into products and services.” For this to occur, “we need a better understanding of the ecology of innovation.”

Mariano Gago, Minister for Science, Technology and Higher Education, said that science in Portugal is characterized by a “culture of seriousness.” This is the area in which young professionals are most internationalized because “their worth comes from the recognition of the best, and that must happen on the world stage.”

The opening session of Annual Conference ended with José Sócrates, Prime-Minister of Portugal, who emphasized the importance of this partnership for the development of the country. He said that science “was the only sector that always had an increase in public investment.” The investment in science, which was 1.2 percent of GDP, was the only item of the state budget that always had a positive and significant progress in terms of national public investment.” In his view, the international partnerships gives the universities the opportunity to compete in the global arena of knowledge. The aim is to increase the number of scientists working in Portugal to “six researchers for every 1,000 people,” thus matching the European average. On the other hand, it was shown that between 2005 and 2007 the number of companies engaged in research and development has doubled. The Portuguese Prime-Minister still had time to give one more relevant figure:

“Portugal is one of the European countries that have the largest number of women in research - about 44 percent of scientists are women.”
Moments

The cloisters of the Palácio da Bolsa were lined with posters and demonstrations of ICTI Master’s and Doctoral Students, as well as from the faculty’s Collaborative Research Projects. This was a great opportunity for the participants of the Annual Conference to witness the achievements accomplished and which are the goals for the future.

Parallel Technical Sessions on Key Focused Areas of ICT

The technical sessions addressed the Carnegie Mellon|Portugal Partnership’s proposed focused areas and presented projects that are currently being developed.
Roundtable Discussion
ICT enabled Innovation

During the afternoon of the Conference, the Salão Árabe (Arabic Hall) became the stage for the Roundtable Discussion moderated by Francisco Veloso, ICT@CMU Education Director. The panelists included Artur Arsénio, Innovation Manager of Nokia Siemens Networks; Manuel Beja, Director for Innovation and Organizational Development at Novabase; Artur Calado, Executive Director of Inova-Ria; and, Eduardo Carqueja, CEO of Ndrive.

Artur Arsénio considers that Portugal has the necessary conditions to become a future leader in ICT but efforts must be made to bring highly qualified people to Portugal to develop an “ecosystems of innovation” and a “culture of risk-taking.” Furthermore, Portugal must construct its current chain of value and create high value products and services.

Conference
Closing remarks

The First Annual Carnegie Mellon|Portugal Partnership Conference ended with closing remarks by João Sentieiro, President of Foundation for Science and Technology (FCT), Manuel Heitor, State Secretary for Science, Technology and Higher Education, José M.F. Moura, Director of ICTI@Carnegie Mellon, and João Barros, Director of ICTI@Portugal.

João Sentieiro stated that in a few years the Partnership will be what the community wishes it to be and that in his opinion “the program is in good hands.” José Fonseca de Moura emphasized the diversity of research topics and added a message of appreciation: “Thank you for the quality of what all of you are doing.” He also touted the work that is implemented by the various corporations, such as Portugal Telecom.

Manuel Beja believes that the demand for ICT in Portugal will grow. ICT currently represents less than 2% of Portugal’s GDP but this percentage will be increase to achieve the European average. Artur Calado discussed the goals of the Inova-Ria, an association of companies. Inova-Ria recognizes that to become a representative industry within the European context, it must align its efforts with those of universities, industries and government. Eduardo Carqueja emphasized that “small is beautiful” in software as one person can make all the difference!

“Think what would be a grand challenge?
Can we define potential ideas to launch a grand challenge?
Manuel Heitor

Manuel Heitor pointed out that the level of the demos, posters and presentations at the conference were very satisfying. “The main goal of the conference was to bring people together and to discuss a strategy”, said João Barros who considers this goal was accomplished.

Best Demo and Best Poster

During the closing remarks, the Best Demo and Best Poster winners were announced. Winners were chosen by the other students who participated in the Conference.
Carnegie Mellon|Portugal Summer Academy

For three consecutive days Porto hosted the Carnegie Mellon|Portugal Summer Academy 2009. This event gathered students, researchers and professionals from industries to attend workshops on: Embodied Futures and Service Modeling; Interaction Design for non-Designers; Agile Software Engineering and Videogame Development and to attend the first Doctoral Consortium of the Carnegie Mellon|Portugal Partnership.

Evidence of outstanding talent and academic achievement, even for students early in their PhD. Also, despite the fact that many students hardly knew each other and are interested in very different things, there was a very nice ambiance in the room, with genuine interest and engagement of students and faculty within and across programs.

Do you think that this kind of event is important to the students?

Yes, very important for several reasons:
1. It allows the students across several PhDs to feel that they are part of the same initiative.
2. It creates an opportunity for them to gain experience presenting their work and getting feedback.
3. They also learn from each other and broaden their academic horizons and, hopefully, even develop ideas to collaborate.
4. It allows them to develop social connections with other top talent in Portugal. And, the students think the same. In fact, as a result of a brainstorming session we did, the students noted that they felt it was important to have opportunities to get together, for work, but also socially.

Summer Academy: Doctoral Consortium

The first Doctoral Consortium (DC) was held on June 23 and combined the students of all the dual degree doctoral programs of the Carnegie Mellon|Portugal Partnership. The aim was to help students through advice on how to take advantage of an interdisciplinary environment. The students presented the plans for their theses and discussed them in the context of the Carnegie Mellon|Portugal Partnership.

Can you tell me two sentences about the event?

I think the DC went very well indeed. It was a great opportunity for the students across the several PhD programs to communicate their work and, equally important, to feel that they are part of and contributing to the same program and set of goals.

Your expectations have been exceeded? Why?

Definitely. First, the presentations gave clear evidence of outstanding talent and academic achievement, even for students early in their PhD. Also, despite the fact that many students hardly knew each other and are interested in very different things, there was a very nice ambiance in the room, with genuine interest and engagement of students and faculty within and across programs.

Francisco Veloso, Education Director, ICTI@CMU

Interview with Francisco Veloso, Education Director, ICTI@CMU.

Can you tell me two sentences about the event?

I think the DC went very well indeed. It was a great opportunity for the students across the several PhD programs to communicate their work and, equally important, to feel that they are part of and contributing to the same program and set of goals.

Your expectations have been exceeded? Why?

Definitely. First, the presentations gave clear evidence of outstanding talent and academic achievement, even for students early in their PhD. Also, despite the fact that many students hardly knew each other and are interested in very different things, there was a very nice ambiance in the room, with genuine interest and engagement of students and faculty within and across programs.

Do you think that this kind of event is important to the students?

Yes, very important for several reasons:
1. It allows the students across several PhDs to feel that they are part of the same initiative.
2. It creates an opportunity for them to gain experience presenting their work and getting feedback.
3. They also learn from each other and broaden their academic horizons and, hopefully, even develop ideas to collaborate.
4. It allows them to develop social connections with other top talent in Portugal. And, the students think the same. In fact, as a result of a brainstorming session we did, the students noted that they felt it was important to have opportunities to get together, for work, but also socially.
Alfredo Baptista, CTO of Portugal Telecom, deems:

"This program is a success"

Portugal Telecom is a leading partner of the Carnegie Mellon|Portugal Partnership. As the program reaches two and a half years, Alfredo Baptista, CTO of Portugal Telecom, observes a very positive balance and classifies it as a "healthy path because it is allowing the contact with a very different culture."

The gains have been notable in two areas: training of human resources and areas of innovation and development. Portugal Telecom (PT) has invested in allowing their employees to earn a Master’s degree, in 18 months, in areas that are relevant to the business, particularly those in which innovative projects that are being developed. For example, PT is currently developing a Security Lab which is modeled on Carnegie Mellon’s CyLab.

With the recent announcement that Portugal Telecom has made in relation to fiber optic, the expectations are enormous. Alfredo Baptista clarified that the goals are ambitious—"to cover one million Portuguese houses"—but achievable given the conviction of Portugal Telecom, that in this time of global crisis, it is important to invest and transform, businesses and the country of Portugal. “This can lead to the growth potential of developing content, applications, networking, or new services that empower the development of applications and software with universities."

"Historically the relationship between PT and the Portuguese Universities is very good and we are interested in creating a new Portugal."

“As noted by Professor Marvin Sirbu, in the opening session of the conference, Portugal and other European countries have in terms of infrastructure a similar situation, but there is a deficit in relation to software," says Alfredo Baptista adding that "At Portugal Telecom we always prefer to bet on innovation, creation of new services and developing good relations with the universities."

Post-Doc Profile: Philipo Cagnetti

Mathematics Department

What project are you developing?
I am a Post-Doc in the Mathematics Department under the supervision of Irene Fonseca and Giovanni Leoni. At the moment I am working on lower semi continuity of higher order functionals. This will be useful in treating rigorously several mathematical models that have been introduced by physicists and engineers.

“I hope I will become both a good researcher and a good professor and that I will wake up every day happy to go to work!”

How has your experience been so far?
Amazing, in many ways. The academic side of my time here has been what I expected it to be: I had the opportunity to work with extremely talented people and I found my mentors both kind and helpful. This has made every working day very pleasant.

When will you go to Portugal?
My time in Portugal officially begins on September 1st, but I am spending the month of July in Lisbon, both to start my work with Diogo Gomes at the Instituto Superior Técnico and to attend some conferences. This means no rest during the summer!
Manuela Veloso is the Herbert A. Simon Professor of Computer Science at Carnegie Mellon. She also leads the CORAL (Cooperate, Observe the world, Reason, Act, and Learn) research group addressing the scientific and engineering challenges of creating teams of intelligent agents in complex, dynamic and uncertain environments.

With her students, she has developed teams of robot soccer agents, which have been RoboCup world champions. Manuela Veloso has a Ph.D. in Computer Science from Carnegie Mellon University and also received a B.S. in Electrical Engineering in 1980 and an M.Sc. in Electrical and Computer Engineering in 1984 from the Instituto Superior Técnico, in Lisbon. She is President of the RoboCup International Federation and she was awarded an NSF Career Award in 1995 and the Allen Newell Medal for Excellence in Research in 1997.

What has been your involvement in the program?
It has been a little like a satellite and very focused on research. My expectation is to create working links with people in Portugal, creating opportunities. The program institutionalizes the opportunity for people to work together, which opened many doors.

What kind of research have you developed?
My research is about artificial intelligence and robotics, artificial intelligence in multi-robots systems. I study the problems between the various parts of a system that must be targeted to achieve certain objectives. I have been working with a post-doc Francisco Melo in the problem of how to make the coordination between agents or robots.

What is the problem that you are trying to solve?
It is a problem of perception. What is happening is that each robot has a limited type of sensors. The robot has to know the overall state of the system as the sum of individual views. This is the first challenge: to merge the set.

“The major problem of robotics is that robots have always a range of choices.”

For you, what is it like to do research?
Doing research is to be curious, but we need more than a curious person. You have no limits to what you think. Raise questions of things that have not been made. The difference in research is not trying to solve a problem towards a more efficient and more marketable solution. We are trying to resolve an issue where there is no immediate resolution, but it is an interesting problem. I do not know if in the future robots will walk around everywhere. But the problem from a scientific point of view is a very interesting one, which was never done in the past. Doing research is to raise these issues.

What is the feeling of being number 1 in Computer Science?
A lot of responsibility, many opportunities and hard pressure.
Lunch with Students at Carnegie Mellon

In May, members of the leadership of the Carnegie Mellon Portugal Partnership and Porto Faculty had lunch with ICTI Ph.D. and MS students at Carnegie Mellon.

Vasco Varela, FCT; Manuel Garcia, Portugal Telecom; João Barros, Carlos Freire, and Alexandra Carvalho Vieira of ICTI@ Portugal; as well as Ricardo Moria, and Miguel Rodrigues from the University of Porto talked with the students about their experiences in the Program and at Carnegie Mellon University.

Carnegie Mellon|Portugal Partnership at Innovation Days

On June 18-20, the Carnegie Mellon|Portugal Partnership was present at Innovation Days, an event organized by the Agency of Innovation.

This included the demo from PT-STAR—Speech Translation Advanced Research to and from Portuguese, with Luísa Coheur and Tiago Luís.

Some members of the team which made the events possible.

The students reported that their experience has been very good. They are working hard to achieve their goals. CMU professors are friendly but demanding and every week they must produce results.

Masoud Nazari, Andreia Rafael, Cristina Carias, Carla Costa, Filippo Cagnetti, Milena Chermisi, Rodrigo Belo, and Ana Venâncio were among the students who were present.

Feedback

What do you think of our newsletter? Share your thoughts and concerns about the articles, suggest topics or contribute articles or pictures. Please send your feedback to news@cmuportugal.org.

The next newsletter will feature an article on the Partnership Statistics, as well as interviews with Pedro Ferreira and Hyong Kim.

Social Networks

http://twitter.com/cmuportugal
http://cmuportugal.blogspot.com/
http://www.facebook.com/