Ajuntament de Barcelona

BCN Innova puts the face on Innovation. Find out about some of the most innovative people in the city.

Interviews

“I do research to improve people’s quality of life” Nuria Oliver, Scientific Director of Multimedia at Telefónica I+D

"Context awareness or perceptual intelligence is related to the ability of computers to perceive their environment"

Passionate about her work and with a stunning professional career, Alicante-born Nuria Oliver is sitting in her brand new office at Telefónica I+D in Barcelona. For her it is a new and interesting project, given that, after having left Spain in 1995 and carried out her research work at the prestigious Massachusetts Institute of Technology (MIT), first, and then at Microsoft, practically side by side with Bill Gates himself, it seemed unlikely for her to find a project that was stimulating enough to make her leave the United States. She is now responsible for creating the future tools for our mobiles and computers, and that is no small task. Nuria Oliver is a telecommunications engineer and has a PhD from MIT; she is also an expert in perceptual intelligence. To get an idea of the importance and the level of her work, it suffices to say that the MIT itself considers her as one of the hundred most innovative young people in the world of technology.

Question (Q) - So, MIT considers you are one of the most innovative hundred young people in the world of technology. I'm impressed… are you?
Núria Oliver (N.O.) - The truth is that it was a surprise. It's one of those types of awards that one doesn't apply for, but rather one is nominated for. I didn't know I had been nominated, and I didn't find out until MIT got in touch to tell me. The best thing was going back to MIT, where I worked for a long time before going to the Microsoft lab in Redmond, Washington. At MIT I have many colleagues and friends, so the award had a very special significance for me. I never got to know who nominated me, but it doesn't matter…

P. - It's surprising for someone who has been working in the US for 12 years, working as a researcher at MIT and Microsoft, to come back here to continue their research…
N.O. - I'm surprised too! It's the first time I have a serious chance to carry out Research and Innovation in my home country. The truth is they have been trying to get me to come back for the last two years, but I didn't want to return just for the sake of returning.

P. - So, what's changed in these last two years?
N.O. - Well, the first contact took place in 2006, when Carlos Domingo, this centre's Managing Director, who was then in Seattle, told me that he was coming back here and asked me whether I wanted to join him. At the time, I was rather sceptical. After, however, around May 2007, Pablo Rodríguez, who until then had been at Microsoft in Cambridge and is now the other scientific director of the Telefónica Centre at Barcelona, told me he was coming over here. After a while, he invited me to visit the centre, and I was surprised. It was different to what I had always seen before going to the United States. The truth is the atmosphere was very similar to that at Microsoft.

P. - So were you waiting to find the right moment to come back?
N.O. - Not really. I was settled in America, and had a life there. I was happy where I was, and I had a lot to lose… But then, at the end of July 2007 my husband was also going through a period of professional changes, so then yes, I knew that was the right moment - and here I am. And I have to say that Telefónica I+D has been a surprise for me. The Barcelona centre is a point of reference, and it is different. Our scientific teams have been created locally, and there has been a conscious decision to function with a certain autonomy with regard to Madrid, enabling us to move with less structural limits, more dynamically.

P. - Exactly what does your role involve as the Scientific Director of Multimedia?
N.O. - We are a scientific team with three well-defined fields or lines of research. Firstly, we carry out analysis of multimedia information, especially with regard to anything related to data indexing and the ability to go beyond text for quick searches on computers or digital terminals; secondly, we develop IT for mobiles, with the mission to explore multimedia and context awareness; and lastly, we also have Human Centered Computing, where we develop projects aimed at improving man-machine communications, as well as communications between people that involve a machine. In general terms, what we do represents the first step in the technology transfer to Telefónica, making it possible to implement solutions by means of prototypes. For this, we have an established infrastructure. And one of the most positive aspects about doing research and innovation in a centre like this - essentially due to it being a services company - is that the cycle of research, transfer and product creation is very short.

P. - But your role is more concerned with the management of the group, is that right? Or do you sit in front of your computer carrying out specific research?
N.O. - For me, it's important not to waste time on administration, organisation and all that aspect… What I like is researching. That is why we have a very flat structure, and we aim to hold very few unnecessary meetings. I also work a lot from home … In terms of my day to day work, I am in the process of identifying talent and establishing the necessary links to find possible collaborative projects with the university, but above all, what I do is research - conceiving and testing new implementations. In my research, I like being closer to industry than to academia. All my researchers and collaborators must be proficient in programming and algorithms. For instance, now, on one of my mobiles, I am testing a new indexing and fast search system for multimedia files.

P. - An indexing system... Could you explain that?
N.O. - For instance, nowadays, when we search for any type of file on our computer or our telephone terminal, recovering or finding it depends on what name we have given the file, what key words we have used, etc. But we have to achieve faster and more varied searches, more subjective. Let me give you a simple example: if I am looking for a red car in all my photograph files, the telephone will look for photographs with a title similar to "red car". What we need to do is make the terminals or computers able to find the red cars in the photograph files, regardless of the names of the photograph files … And that will also be useful when looking for new search engine tools, for example.

P. - How long can it take from the moment you conceive and test a new function until it is available on the market as a new product or service?
N.O. - Roughly about two years, but it depends.

P. - Tell me, what is context awareness?
N.O. - It's what we also refer to as perceptual intelligence or computational perception, and it's related to the ability of computers to perceive their environment. We could say it's about researching how computers can perceive aspects of human behaviour and of that of their environment. First, it's necessary to find the right receivers, and then, to analyse the data provided by these receivers in order to find patterns.

P. - Should we start thinking of machines that are more intelligent than humans?
N.O. - Computers are undoubtedly more intelligent every day, and their intelligence will continue to increase. Their intelligence, or their completeness. It's a process. Now, the great challenge is data analysis. It involves research with a wide and distant horizon, though we are already making progress, and that is why I am so interested in it. It has great social impact, and that is something that interests me greatly. Technology must serve to improve people's quality of life – that is why I do research.

P. - Digital telephones or platforms offer more possibilities every day, but these are not always exploited. What is more important: the service itself, or the possibility of accessing that service?
N.O. - I don't know for sure. It's certainly true that discovering all the possibilities that a certain machine can afford us may be one of our pending challenges. But that is precisely why I like and I am interested in doing projects with a direct impact. I like new and quick ideas. Thinking of new things and new services.