

Five Minutes with Bernardo Huberman : “There are real opportunities for social scientists to turn their tools into something applicable to the real world”

 blogs.lse.ac.uk/impactofsocialsciences/2012/10/05/five-minutes-with-bernardo-huberman/

10/5/2012

Continuing a series of interviews from PPG’s Impact of Social Sciences project, [Rebecca Mann](#) spoke with [Bernardo Huberman](#), who is Director of the Social Computing Research Group at HP Labs and a Consulting Professor at Stanford University. Here, he explains why research needs to be interdisciplinary and discusses the opportunities for academic social scientists within industry.



How would you describe your research approach in the Social Computing Group at HP Labs?

By design, I have a very interdisciplinary group. We have people in computer science, specialists in human-computer interaction and people with economics backgrounds – I myself worked in theoretical physics. I believe very strongly that this type of approach is necessary to tackle the important problems that will arise in the near future. We are a small group, but that makes it easier to tackle new problems enthusiastically as opposed to bureaucratically. Our research is very diverse: we have analysed what factors drive [trending Twitter topics](#), developed methodologies to harness the [predictive power](#) of social media, and devised an algorithm to measure the [relative influence](#) of social media users, just to give a few examples. In addition I have been very active in the field of the attention economy, which I believe is at the centre of the information age.



I believe in scientific research inside industry because the quality standards in academia are unique in the world and have evolved over centuries. This ensures that the work in industry benefits from state of the art knowledge and technology. Thus, we ‘marinate’ in a fairly academic environment – most of us write papers and go to conferences – while at the same time doing things that have an impact on the company.

Are there opportunities for social scientists to collaborate with industry?

Absolutely – at HP we fund collaborations with universities and most of them are considered very successful. Currently, I am nearing the end of a two-year project with economists at the University of California, with whom we are running economic experiments. We initiated the project and they were happy to work with us because they liked the topic, which is very applied and yet it answers interesting questions about human behavior. I’m starting a new collaboration on data visualisation with another group at UC Davis. We also work with non-US universities, often hosting summer visitors from Europe, and give lectures – I gave one at the London School of Economics for example. I find this tremendously valuable. It puts me in touch with top students and ambitious PhDs and I try to recruit them.

There are real opportunities within industry for academic social scientists, who may not be aware that they can turn their tools into something applicable to the real world. For example, a while ago I gave a seminar at the University of California Santa Cruz about problems of social attention that are starting to appear in the web. The talk was attended by some economists there who were interested by the issues discussed, such as the attention economy. That led to a fruitful collaboration, based on a patent that we obtained earlier on the topic.

There are also interesting opportunities in terms of access to data. We just finished a piece of work where we looked at millions of people behaving online. This is a whole revolution. It’s true that how people behave on Facebook or Twitter or FourSquare is not always how they act in the real world. But it so happens that a large portion of mankind is moving in that direction. I would say that the kinds of computer scientists who are being hired in Silicon Valley are

people who had a background in social networks and a little bit of social science, because big data is becoming the big thing.

There was a sociologist from a large university once in the audience of one of my lectures. After the talk, he said to me – ‘social science is moving to Palo Alto’ and he did not mean my work, but the fact that a lot of the social media companies that are in Silicon Valley constitute a valuable source of data. I don’t pretend to be a sociologist – but we can do large social studies by monitoring behaviour online, we can study

economic systems by looking at huge numbers of internet transactions, and we can gather this data extremely quickly. Data collection in academic work has the reputation for being very slow, taking 2-3 years. But you can do most of these things very quickly now because of the technology. Certain things take time, of course – if you want to study how people grow, you have to wait for them to grow. But in general, clock speed has changed because of the technology.



HP Labs, Palo Alto CA. Photocredit: hpl.hp.com

What constraints are limiting collaboration between academic social scientists and industry?

I gave a talk at Cambridge University last year and afterwards there was a discussion about the fact that social science PhDs don’t seem to have the skills to handle big data. And on the other hand, people who study statistics don’t know what the interesting social problems to study are. That loop is one that has to close.

The real problem, from an industry perspective, is that people in departments at universities see the discipline through the eyes of their peers, which rewards work that is extremely specialised and appreciated only by their immediate colleagues. I find the traditional divisions between departments in universities to be a hindrance to the type of things I’m interested in doing. I came to HP Labs to create this group because I have the freedom to look into the problems I am interested in and then deploy the kind of interdisciplinary resources you need to answer those problems. At universities this is almost impossible. Your colleagues want you to speak their language, to spend time sourcing funding. True interdisciplinary work is limited, even in centres of excellence, because the politics means they tend to end up being administrative units, and little work is often done.

When I was at Xerox Parc, there were anthropologists and sociologists who were studying how people behave in the office and how they use technology. That work was useful and relevant to the company and the academic community. However, the academic disciplines have become extremely baroque and specialised in many ways, and this includes many of the social sciences – anthropology, sociology – as well.

What advice would you have for social scientists who want to have impact within industry?

There is a shift today in academic disciplines – I’m not sure if you sense it in England. But with the exception of biology and fundamental physics, most of the interesting problems in the fields that I care about at the moment are motivated by real-world problems. Computer science as a theoretical enterprise has kind of imploded. There are few purely academic problems that people in that area spend a lot of time working on. Graph theory, and computability are the good examples. But the work that has impact deals real-world problems – when people who study social networks analyse real social networks using data from Twitter, for example. This has led to an explosion of empirically-based knowledge that is motivated by a sense that there is a practical need for it.

I believe that there is some kind of efficiency in the system. If academic work is not being taken up by industry, it may be because it’s of little value to business. I tend to think of businesses as being fairly efficient at seizing opportunities. If academics were doing things that the businesses wanted, I think they would jump at the opportunity to work with them.

The question is to understand where the world is going, what is happening, what are the trends. Technology is

changing the way work gets done: how it's outsourced, how content is being crowdsourced. There are huge opportunities for studying these kinds of new phenomena. I think that it behoves us all as researchers to really sense where the future is, where are the interesting trends, and see if we can do something along those lines. My attitude has always been to try and do something that intersects with where I think the world will be in two – three years. Most of the time I am wrong, but sometimes I happen to be lucky and it works.

Note: This article gives the views of the interviewee, and not the position of the Impact of Social Sciences blog, nor of the London School of Economics.

Photo credit: gigaom.com (2009)

About the author:

Bernardo Huberman is Director of the Social Computing Research Group at HP Labs and a Consulting Professor in the Department of Applied Physics at Stanford University. He received his Ph.D. in physics from the University of Pennsylvania and has worked at Xerox PARC, where he did research on the physics of chaos, distributed systems and Internet characterization. He tweets from @bhuberman.

About the interviewer:

Rebecca Mann is a researcher with the LSE Public Policy Group. She holds a Master of Public Administration from the LSE and degrees in Law and Economics from the University of Sydney. Previously, she was a lawyer at Herbert Smith LLP in London and an adviser in the Innovation & Strategy Unit at the Department of Justice in Melbourne, Australia.

- Copyright © The Author (or The Authors) - Unless otherwise stated, this work is licensed under a Creative Commons Attribution Unported 3.0 License.