ECE DISTINGUISHED SPEAKER SERIES

José M. F. Moura

Visiting Professor, CUSP, NYU
(2013-2014)
Carnegie Mellon University
moura@nyu.edu
www.ece.cmu.edu/~moura

Host: Professor Sheila Hemami
(s.hemami@neu.edu)

The Data Deluge – the End of Theory?

Friday
March 14, 2014

140 The Fenway

4:00 pm

Mine is a parody on the (provocative) title of Chris Anderson's 06.23.08 piece[1] "The End of Theory: The Data Deluge Makes the Science Method Obsolete." Data (big), computers (cloud), storage (vast), bandwidth (massive) and Google (or the likes) will find the *correlations* that will save the day. No (need for) *causation.* May be; or we might still try to explain it. Data is big, but, more importantly, comes in all sorts of ways and from many different sources – social, physical, biological, molecular, to name a few. However, if we do capture the relations among data through (arbitrary) graphs (and this in itself is a big if), we can recapture the "big data" challenge in the very familiar setting of everyone's beloved DSP. This talk will overview our progress so far extending to signals and data defined on graphs traditional signal processing concepts including shifting, frequency, filtering, convolution, spectral representation, filters frequency response, linear transforms like the discrete Fourier transform. We illustrate with data drawn from social networks and the World Wide Web.

Work with Dr. Aliaksei Sandryhaila and graduate student Jonathan Mei.

[1] Editor in Chief of Wired Magazine.

José M. F. Moura is a visiting Professor at CUSP, NYU (2013-14). He is the Philip and Marsha Dowd University Professor at Carnegie Mellon University, with interests in statistical signal processing (SP) and distributed SP on graphs. He was an IEEE Board Director (2012-2013), he was President of the IEEE Signal Processing Society (SPS), and was Editor in Chief for the Transactions on SP. Moura received several awards including the IEEE Signal Processing Society Technical Achievement Award and the IEEE Signal Processing Society Society Award for outstanding technical contributions and leadership in SP. He is a Fellow of the IEEE, a Fellow of AAAS, a corresponding member of the Academy of Sciences of Portugal, and a member of the US National Academy of Engineering.

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