Mine is a parody on the (provocative) title of Chris Anderson’s 06.23.08 piece “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.

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