Abstract: In the era of Big Data are traditional analysis tools and concepts drawn from signal processing any useful? In social contexts, or the web, or enterprises, the relations and dependencies among data are often conveniently represented by graphs, with the data becoming functions or signals on a graph—a point of view structurally different from the one traditionally adopted with time series. This talk extends the basic concepts of signal processing to graph signals: filters and filtering, shifting, frequency, low-, high-pass graph signals, frequency response, linear transforms, Fourier and z-transforms. We then illustrate signal processing on graphs with datasets from social networks, a service provider, and the web.

Work with Dr. Aliaksei Sandryhaila and graduate student Stephen Kruzick

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