Estimating Features of a Social Network Using a Sample

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Abstract:

An individual’s social environment influences many economic and health behaviors. Social network data, consisting of interactions or relationships between individuals, provide a glimpse of this environment but are extremely arduous to obtain. Collecting network data via surveys is financially and logistically prohibitive in many circumstances, whereas online network data are often proprietary and only informative about a subset of possible relationships. Designing efficient sampling strategies, and corresponding inference paradigms, for social network data is, therefore, fundamental for scaleable, generalizable network research in the social and behavioral sciences. This talk proposes methods that estimate network features (such as centrality or the fraction of a network made up of individuals with a given trait) using two common strategies for sampling from networks: aggregated relational data (ARD) and respondent driven sampling (RDS). Aggregated relational data (ARD) poll individuals about the number of connections they have with certain groups in the population, but do not measure any links in the graph directly. Respondent driven sampling is a form of link tracing design where respondents recruit other members of a target population through their social network. I demonstrate the utility of the proposed models using data from a savings monitoring experiment in India and a population of injection drug users in Ukraine.

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Note: Taking photos during the seminar is prohibited.

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