Propositions
belonging to the dissertation
Dynamic Social Graphs: Mining and Modeling
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1. In West Germanic languages, the combination of full names of a husband and wife provides a fingerprint that is very often unique, and can be used for cross-matching across different data sources (Chapter 3).

2. Extraction of knowledge from noisy and big data has been significantly improved in recent years, though not knowing how to make use of this knowledge has become a bottleneck for further advancements (Chapter 4).

3. Hierarchies prevail because they facilitate the communication and increase the network robustness to random failures; however, they can lead to extremely unfair share of resources (Chapter 5).

4. A social network with a single stubborn group can easily converge to a shared opinion, while a social network with multiple stubborn groups that have different behaviors can hardly converge (Chapter 6).

5. The cooperative behavior of a social network is highly dependent on the attitudes of individuals who initiated the network (Chapter 7).

6. Study of dynamic social graphs is studying individuals who act rationally, occasionally imitate their peers, and from time to time show random behaviors. Thus, only a synergetic interaction between Game, System and Probability theories can provide accurate models of behavioral evolution in social graphs.

7. Data Science has no boundaries and as a result there doesn't exist a uniform definition for it. This could be explained by the coevolution of data collection and data processing techniques. The new types of collected data require new analysis techniques, and this in turn leads to possibility of analyzing new sources of data.

8. Machines will not outperform humans in every task in the near future. However, humans with enhanced abilities through artificial intelligence/components (i.e., cyborgs) may do.

9. It is possible to get a PhD degree by working 8 hours a day. However, top publications, strong scientific collaborations and outstanding future job offers are a result of the efforts during the other 16 hours.