

June 18, 2023

Dear faculty,

I write here my review of the Bachelor Thesis of Ales Prokop.

Summary of the Thesis

The thesis studies a model of opinion diffusion in social networks. In particular, it builds and extends on the state of the art in the field, mainly by considering a stochastic – and, as such, better motivated – model of opinion diffusion, in contrast with the mainly-deterministic models of opinion diffusion in the literature.

The thesis first describe a clean, clear mathematical model of the setting; then it goes on to discuss a simulation environment that was built together with some conclusions that follow runs of the simulation environment; and, finally, it continues to study the natural, fundamental question of convergence of processes of opinion diffusion: unfortunately, full analysis is not present in the thesis (it is understandable, as the problem is mathematically non-trivial to formally analyze; for this, the reports on simulations is of analytical merit as well), but analysis with respect to certain properties and special graph classes that represent the social networks on top of which the opinion diffusion process occurs.

Evaluation of the Thesis

The thesis studies a relevant, important problem in the field of social network analysis and computational social choice. It is an extension of the state of the art and considers a problem that is in active research within the scientific community.

The thesis is written well, with the major concepts explained clearly and correctly. The level of analysis is good, with an impressive combined analysis that interleaves computer-based simulations (including a worst-case instance generator as well as standard probabilistic models for the creation of simulation instances) and – albeit not complete – theoretical analysis of the mathematical model that is developed within. The scope of the thesis rather large as well, with many different special cases introduced and analyzed.

Grade

I assign the grade 1 to the thesis.

Sincerely,



Nimrod Talmon