Gergely Pósfai

EIT Digital Budapest DTC

PhD topic: Predictive Modelling in Social Networks

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'At EIT Digital Doctoral School I learned how I can leverage scientific research results in a business environment. The Doctoral School also gives me the possibility to meet and learn from successful people from the industry.'

Achievements & further plans

Gergely is in the middle phase of his PhD studies. His research investigates the possible applications of **information diffusion models** in the field of **predictive modelling**. In the first part of his PhD programme, he has been focusing on the field of social recommender systems. He has been analysing how the users' ratings on products propagate in the users' **social network**, and how the users' future ratings can be predicted based on a few previously observed ones. That is, he analyses how direct and indirect neighbors influence each other in the social network and he uses this information for suggesting products to users that they will probably like in the future.

Modern web applications generate enormous amounts of data, efficient methods are necessary to select, discover and provide relevant and personalized information to users. Social and trust-aware recommender systems are one of the new approaches that aim to tackle this information overload problem. Therefore, social recommender systems can significantly improve user experience by enhancing the quality of content delivered to users.

Educational status at Spring semester of 2016:

RA	OR	BMD	GH	Mobility	BDExp.

Reserach topic

Recommender systems (RSs) are widely used in the industry. Applications include movie (imdb), product (Amazon) and other types of recommendations. However, social RSs is a new, not so extensively studied field. While traditional RSs only consider the information of the users' previous ratings on products, social RSs leverage the users' social network.

In his research, Gergely investigates the application of popular information diffusion models to incorporate social information in the recommending process. The underlying idea is that opinions propagate in the users' social network in a similar way to how the information propagates in these information diffusion models. Gergely has developed two new methods based on the idea of information diffusion models.

Empirical results show that these methods outperform many existing techniques in terms of both recommendation quality and quantity. However, these methods are still quite simple, there are many aspects that were not analysed extensively yet, therefore there are many promising directions for future research such as exploring how the effects of dynamic social relations change over time or classifying the users' friends according to their trustworthiness.