



**Social Network Group
@ Wrocław University of Technology**



Invitation to the meeting

When: 2014-02-13, 11:15

Where: Wrocław University of Technology

bldg. A-1, 1st floor, room 202 (entrance through room 203) - [campus map](#)

Agenda:

11:15-12:15 – Jarosław Jankowski (West Pomeranian University of Technology, Szczecin): Presentation of an article **Modeling Multi-state Diffusion Process in Complex Networks: Theory and Applications** by Yishi Lin et al.

12:15-13:15 – Lunch (we will order something, please prepare ~15zł in cash)

13:15-14:30 – Andrzej Misiąszek (Wrocław University of Technology, Wrocław):
Sentiment analysis

Important:

Due to the fact that we'd like to order food for lunch, please confirm your participation here: <http://doodle.com/88ttb4cexq8uehgz> by **Tuesday, February 11th 3 PM** at the latest! In other case you will get no lunch! Please prepare about 15zł in cash for it. We will order dumplings of different kinds most probably.

Our webpage:

<http://www.ii.pwr.wroc.pl/~sna/>

Next pages contain brief summary of what will be presented (so called *one-pagers*).

Jarosław Jankowski
(West Pomeranian University of Technology, Szczecin)

Presentation of an article *Modeling Multi-state Diffusion Process in Complex Networks: Theory and Applications* by Yishi Lin et al.

Jarek Jankowski will present an article entitled “*Modeling Multi-state Diffusion Process in Complex Networks: Theory and Applications*” by Yishi Lin et al. Jarek participated in the Complex Networks Workshop in Kyoto, Japan last year where this paper was presented and he’d like to share this article with you.

You may find this article here: <http://milab.snu.ac.kr/pub/SITIS2013.pdf>

Abstract: There is a growing interest to understand the fundamental principles of how epidemic, ideas or information spread over large networks (e.g., the Internet or online social networks). Conventional approach is to use SIS model (or its derivatives). However, these models usually are over-simplified and may not be applicable in realistic situations. In this paper, we propose a generalized SIS model by allowing intermediate states between susceptible and infected states. To analyze the diffusion process on large graphs, we use the “mean-field analysis technique” to determine which initial condition leads to or prevents information or virus outbreak. Numerical results show our methodology can accurately predict the behavior of the phase-transition process for various large graphs (e.g., complete graphs, random graphs or power-law graphs). We also extend our generalized SIS model to consider the interaction of two competing sources (i.e., competing products or virusantidote modeling). We present the analytical derivation and show experimentally how different factors, e.g., transmission rates, recovery rates, number of states or initial condition, can affect the phase transition process and the final equilibrium. Our models and methodology can serve as an essential tool in understanding information diffusion in large networks.

Andrzej Misiaszek
(Wrocław University of Technology, Wrocław)

Sentiment analysis

Sentiment analysis is a hot topic in the field of data mining. On its basic level it gives us answer about the opinion polarity (negative/positive) of a given document also in context of a specific topic. This presentation will focus on all possible aspects of sentiment analysis based on research done by Professor Bing Liu.