

Topic Models Considering Weather Context

In everyday life, we keep receiving recommendations from others either by words of mouth, press print, or multi-media such as TV advertising. Nowadays, Amazon always tries to guess what you would be interested in and give some similar items as recommendations. In order to make these recommendation systems, developers need to predict users' interests. POS data is the simplest way to know them, but not all service providers can get POS data.

Then, there are some researches to predict users' interests from micro blogs such as Twitter. Those researches use models called "Topic Model" to classify words into some topic cluster because same words sometimes mean different objectives (For example, topics of words "lose weight" maybe "beauty" or "health"). Furthermore, since users' topic changes owing to weather context, we aim to "research the relationship between weather context and content posted on Twitter using topic models". We show the example of the relationship between weather-context and topics, and relationship between topics and words in Figure 1, and results in Figure2.

Key Words: context-aware, recommendation, topic model, weather-context, Twitter

Reference

[1] 伊藤 拓, 深澤 佑介, 朱 丹丹, 太田 順, Tweet内容に影響を与える気象条件と特徴語の抽出, 情報処理学会, 2014-MBL-73, No.1, 2014.

[2] Taku Ito, Yusuke Fukazawa, Dandan Zhu and Jun Ota, Climate Condition that Mostly Affects the Change of the Tweet Content, International Conference on Mobile Computing and Ubiquitous Networking (ICMU2015), 20 Jan 2015.

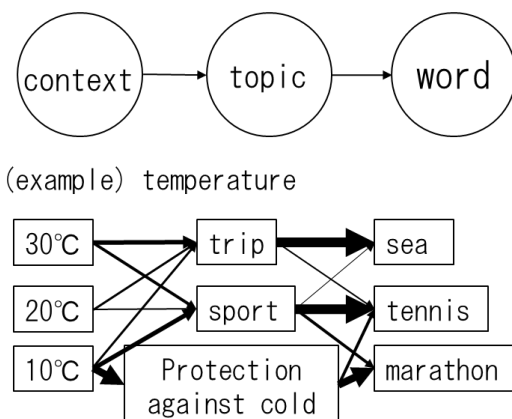


Figure 1: Relationship between temperature-context, topics, and words

About 22°C September		About 28°C September	
words	weighting factor	words	weighting factor
ヨーグルト	0.150690	抹茶	0.191786
ピッツァ	0.082197	牛肉	0.123292
食パン	0.068498	かき揚げ	0.095895
サバ	0.068498	ハチミツ	0.082197
漬物	0.054799	ソフトクリーム	0.041101

Figure 2: Topic clusters of different weather