Ritsumeikan University
College of Information Science and Engineering
Digital Governance Systems Laboratory

Dynamic VAA Profile Generation Using Sentiment Analysis with Twitter Data

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Course: PBL5, Professor Uwe Serdült

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V – Reference

Terán, L., & Mancera, J. (2019). Dynamic profiles using sentiment analysis and twitter data for voting advice applications. Government Information Quarterly, 36(3), 520-535.

Terán, L., Kakenova, U., & Portmann, E. (2017, March). Analyzing and integrating dynamic profiles on voting advice applications. In Proceedings of the 10th International Conference on Theory and Practice of Electronic Governance (pp. 62-69).

I – Background / Problem

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Voting Advice Application

- Matches the voter with politicians or party's preferences on policies
- Growth in use for recent years
- Growth in numbers of politicians

Problems

- VAA profile generation requires experts
- Updating requires a lot of time
- Profiles may not be up-to-date
- Politicians may not respond to surveys

II – Project Goal

Proposed Solution in Literature

A system that generates Dynamic VAA profiles from performing sentiment analysis on politician social media posts.

Collecting politician sentiment from their social media

- Politicians during election periods have high activity
- Social media is up-to-date also during election period
- Twitter is a large platform in Japan

III – Data Acquisition

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Twitter

- Scraping or Twitter API
- In progress for this week
- Successfully Scraped tweets from specific users
- Tweets are very noisy

Target Election and Politician

- Undecided – Need further research
- Potentially an Election with:
  - All candidates active on Twitter
  - Such election has a large VAA platform for model evaluation

IV – Implementation

Topic Extraction

- We need to classify tweets into topics (e.g. finance, education, energy…)
  - BERTopic - Semi-supervised training with seed words.
  - Fuzzy Clustering – Implemented in the literatures

→ Read into these techniques

Sentiment Analysis

- Use a Japanese Language Sentiment Library to calculate Arousal and Valence value for mapping sentiment on the Likert scale

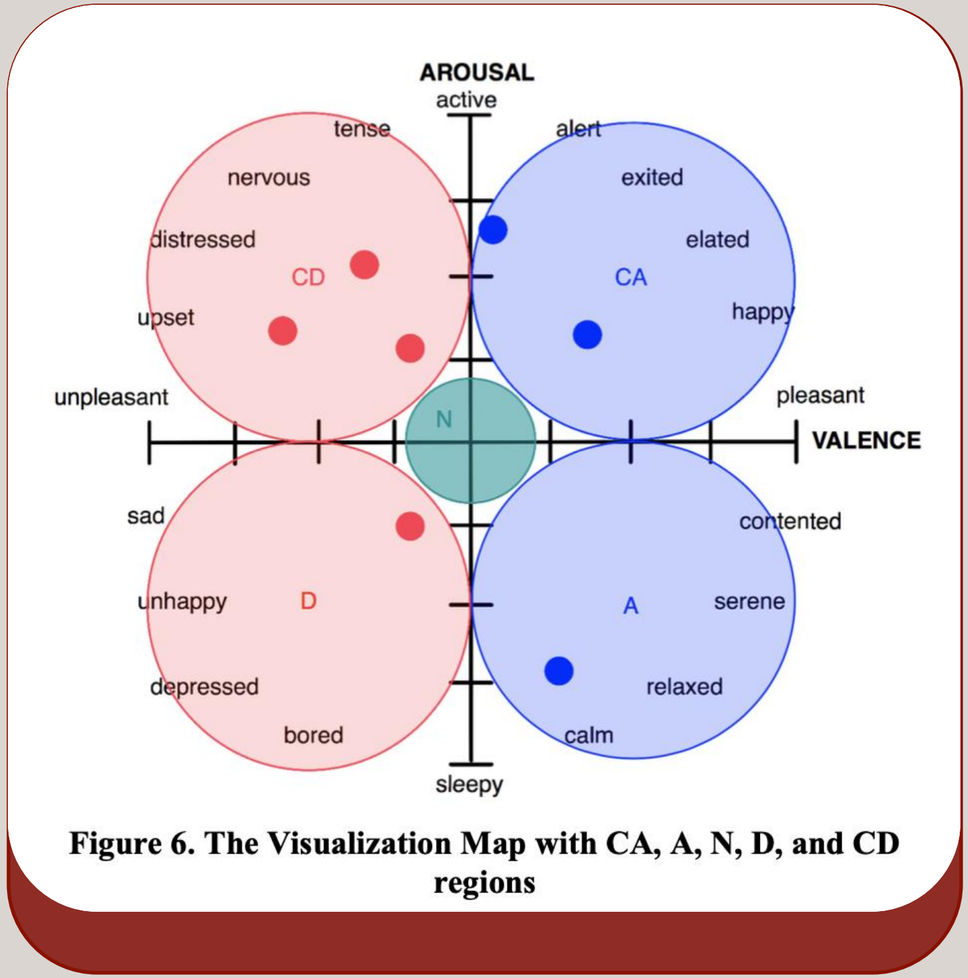

Figure 6. The Visualization Map with CA, A, N, D, and CD regions

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