

chen_2022_a_decade_of_sentic_computing_topi c_modeling_and_bibliometric_analysis

Year

2022

Author(s)

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Title

A Decade of Sentic Computing: Topic Modeling and Bibliometric Analysis

Venue

Cognitive Computation

Topic labeling

Manual

Focus

Secondary

Type of contribution

Established approach

Underlying technique

Manual labeling assisted by associated documents

Topic labeling parameters

Label generation

The topics were labeled according to the representative terms and articles.

Table 10 Results of the STM model

Labels	Representative terms	%	p	Tendency
Languages	Thai, multi-domain, urdu, dictionary, word, grammatical, persian, embedding, lexicon	19.69	0.348	↑
Cyber issues and public opinion	Assertion, cyberbullying, rumor, deliberation, induced, photo, unacceptability, sense, retweeting	15.25	0.917	↑
Deep neural networks and personality	Deep, trait, neural, personality, supervision, learning, network, community, belief, convolutional	14.81	0.252	↑
Opinion and review mining	Trigger, adverb, review, product, helpfulness, customer, consumer, movie, online, rating	11.75	0.348	↑
Sentic computing for the arts	Sarcasm, figurative, color, expressive, inspired, nastiness, palette, sign, vague, artwork	11.73	0.348	↓
Financial applications and user profiles	Stock, profile, financial, market, price, personalized, folksonomy, tag, advertisement, tag-based	13.44	0.009	↑↑↑
Affective and emotional computing	Emotion, lexical, corpus, irony, senticnet, signal, affective, lexicon, detection, computing	13.33	0.917	↓

%: topic proportion;
 ↑(↓): topic with an annual increase (decrease) in proportion but not significant ($p > 0.05$);
 ↑↑(↓↓), ↑↑↑(↓↓↓), ↑↑↑↑(↓↓↓↓): topic with a significant annual increase (decrease) in proportion ($p < 0.05$, $p < 0.01$, and $p < 0.001$, respectively)

Motivation

Topic modeling

STM

Topic modeling parameters

Nr of topics: 7

Nr. of topics

7

Label

Manually assigned single or multi word labels

Label selection

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Label quality evaluation

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Assessors

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Domain

Paper: Bibliometrics (Sentic Computing)

Dataset: Sentic Computing

Problem statement

Research on sentic computing has received intensive attention in recent years, as indicated by the increased availability of academic literature. However, despite the growth in literature and researchers' interests, there are no reviews on this topic. This study comprehensively explores the current research progress and tendencies, particularly the thematic structure of sentic computing, to provide insights into the issues addressed during the past decade and the potential future of sentic computing. We combined bibliometric analysis and structural topic modeling to examine sentic computing literature in various aspects, including the tendency of annual article count, top journals, countries/regions, institutions, and authors, the scientific collaborations between major contributors, as well as the major topics and their tendencies.

Corpus

Origin: Web of Science, Scopus, Association for Computing Machinery, Springer, IEEE Xplore Digital

Library, and Wiley

Nr. of documents: 308

Details:

- one decade of sentic computing studies starting from 2010
- search term “sentic*”

Document

A single article

Pre-processing

- Data deduplication
- filtering process was conducted by two domain experts in sentic computing to exclude the articles that were not closely relevant to the topic

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the future directions of sentic computing research.},
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