Opinion Mining, Summarization and Diversification (RevOpiD-2018)

Keywords

Opinion Mining	Diversification	Online Reviews	Cultural Analytics
Opinion Modelling	Summarization	Bias Contagion	Digital Humanities

Abstract

The workshop aims at uncovering diverse perspectives to defining opinions. How can opinions be better summarized on online forums, in web search results or elsewhere? What relationships can be mapped between exchange of opinions on the web? We invite submissions on all such relatively unexplored dynamics of opinion mining and modeling. We also host a shared task on Review Opinion Diversification, wherein participants are asked to model opinions and mine them from an original dataset of more than 10,000 Amazon annotated product reviews.

Description

The 'Blogfather', Hossein Derakhshan, also an invited lecturer at ACM Hypertext 2016, has often advertised the need to move beyond Newness and Popularity on social media. What he proposes are new content-finding algorithms that take into account Quality and Diversity of thought. At a time when the hyperlinked Internet of open ideas is shifting to a TV-internet of curated content, the need to understand opinions and their flow is at an all-time high.

Through a workshop on Opinion Mining, Summarization and Diversification, we aim to cover the following themes, around which we invite submissions, in the form of original work and progress reports:

- Review Opinion Diversification
- Opinion Modeling techniques
- Text and Sentiment Summarization
- Opinion summarization in ranking
- Exchange of opinions as network graphs
- Joint Topic Sentiment Modeling
- Phrase Embeddings
- Sentiment Normalization on a relative scale
- Paraphrase detection in opinionated text
- Factors affecting likeability of online reviews
- Fake review detection
- Sarcasm detection in online reviews
- Bias propagation on online forums
- Evaluation of opinion diversity
- Evaluation of representativeness and diversity in ranking
- Knowledge Representation methods for opinions

SHARED TASK (RevOpiD-2018)

As part of the workshop, we will also be hosting a shared task on Review Opinion Diversification. The shared task aims to identify opinions from online product reviews. By identification of opinions, we don't just mean string matching with a predefined list. Instead, we reward two systems equally whether they recognize '*this*

product is cost-effective' as an opinion or, instead, '*this product is inexpensive*' or '*this product is worth the money*.' We have an annotated dataset of 85 products, with more than 10,000 reviews in totality, each review being labelled with its constituent opinions in the form of one opinion matrix per product.

Subtask A

A supervised task to predict the helpfulness rating of product reviews based on review text. For a review which 3 users rated as helpful and 2 users found not-helpful, will be 3/5.

Subtask B

Subtask B judges a system on its ability to tell whether a given review *R1* contains a given opinion *O1* or not. While *R1* can be easily identified by its Reviewer ID, opinions are not labeled with words. Instead, they are identified by the other reviews that they appear in. Therefore, we ask the participants to provide an opinion matrix as output, which we will evaluate using several verified metrics.

Subtask C

This subtask aims at producing, for each product, top-*k* reviews from a set of reviews such that the selected top-*k* reviews act as a summary of all the opinions expressed in the reviews set.

Sterling Silver Cubic Zirconia Eternity Ring	
Product Reviews	
1. Alex	Date : 24/07/2016
This ring is pretty, it can go good with another ring. It narrow and the stone size is small by it self. It would be a good thumb ring. Again nice ring that does not have alot of bling.	
2. Bran	Date : 20/07/2016
The ring was a gift and my daughter loved it!!! It is very sparkly and fit just right! I would highly recommend this product.	
3. Chau	Date : 14/07/2016
This ring is amazing for the price. It doesn't turn my finger white, and the sizing is great. It's just a little bling that isn't too flashy. I wear it as a thumb ring. I think it's really pretty, and very sparkly.	
4. Dany	Date : 29/06/2016
This sterling ring is not too wide, it has a nice touch with the CZ all the way around, making it easier to wear for my wife, because she doesn't worry about it spinning and cutting into the fingers to the side. The CZ stones are recessed a bit making it pretty smooth.	

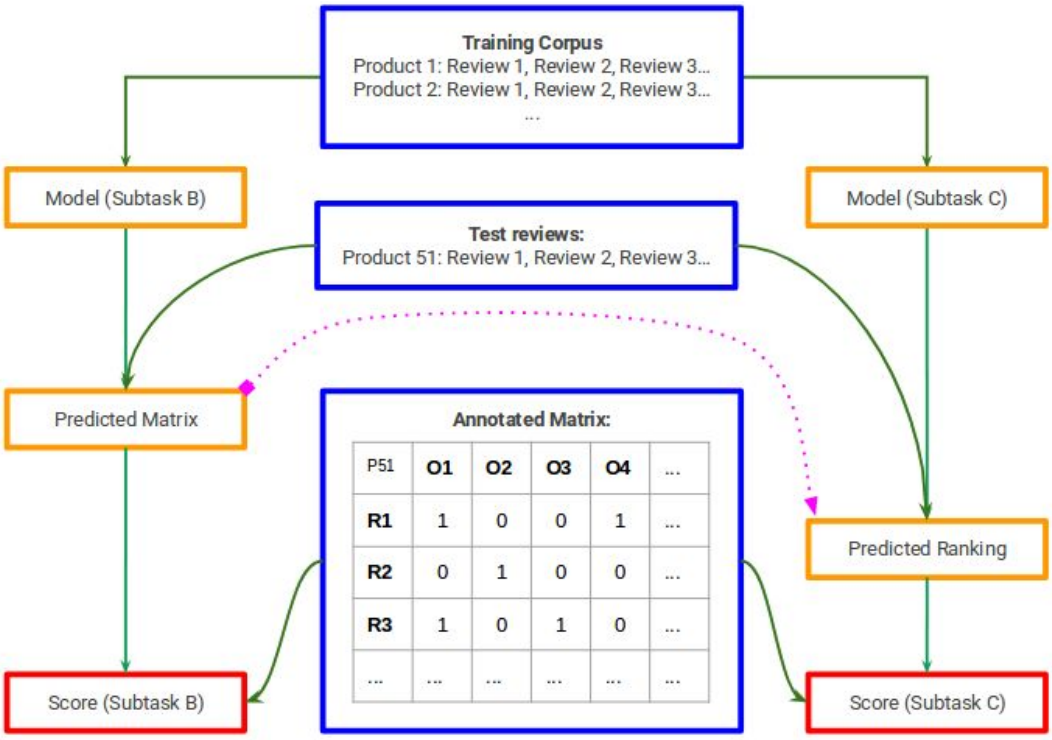
Opinion Matrix					
	Realistic Look	Good deal	Many sizes	Good for gifts	Sparkly ring
Review1	X	X			X
Review2		X			
Review3			X	X	
Review4	X				X
Review5	X	X	X		
Review6	X			X	
Review7				X	X
Review8	X		X		
Review9					X
Review10		X	X	X	
Overall	5	4	5	4	4

RevOpiD-2017

A first run of the shared task RevOpiD-2017 was hosted at the 8th International Joint Conference on Natural Language Processing (IJCNLP-2017), which saw active participation from the NLP research community, especially from Asia. We had 40+ teams who registered for the task, and with whom we continued interaction throughout the run. Finally, 3 valid submissions were received while a few other teams have informed us that they are continuing work on their systems. Next year (2018), we aim a much higher participation and have worked extensively in directions needed as given below:

1. The dataset that was under preparation during RevOpiD-2017 is now completely annotated and ready to be sent to participating systems. Delays and inability to perceive how the test data will look like is thus avoided.
2. We earlier managed to provide just one naive baseline for the ranking subtask. As opposed to this, we now have 4 baselines (Rule based, Implicit Feature Mining, Topic Modeling, Document Embeddings) ready this time, providing systems with a tentative direction to work towards.

3. A major modification is the intermediate testing (as Subtask B) of the opinion matrices. By testing whether a system can individually identify opinions in reviews, we try to simplify an already difficult unsupervised task.
4. Rather than enforcing our motivations on the audience, we also invite viewpoint papers on alternative ways of opinion summarization by proposing a workshop instead of only a rerun of our shared task.



Relevance and Motivation

The ACM Conference on Hypertext and Social Media (HT) covers various aspects of linked data and social media. The track whose purview our workshop proposal falls under is “Digital Humanities and Social Networks”. Since this conference is a premier venue for researchers working on recommendation systems, social media analysis, user modeling and linked data, we believe our proposal is quite in line to all such dimensions of research and is, hence, relevant to the audience of Hypertext 2018. In addition to the above, we offer a semantically annotated corpus of online reviews with the common opinions found in them. It would be exciting to see what directions of exploration can be undertaken with this resource at the disposal of all who wish to participate in our shared task.

Organizers

Anil Kumar Singh (Primary Contact), IIT (BHU), Varanasi, India, aksingh.cse@iitbhu.ac.in

Working as Associate Professor in the Department of Computer Science and Engineering. Areas of interest are Natural Language Processing, Information Retrieval, Information Extraction. Has been a researcher for the last fourteen years. Has organized an international conference and several research workshops, including two shared tasks. Serves as a reviewer for several journals and conferences. Was the organizing chair of RevOpiD-2017 shared task at IJCNLP-2017, which was the previous version of this workshop. Has also developed some open source softwares for Natural Language Processing.

Julian McAuley, University of California, San Diego, USA, jmcauley@eng.ucsd.edu
Working as Assistant Professor in the Department of Computer Science. Is a well-known researcher on recommender systems, computer vision, knowledge management and related areas. Was the organizing co-chair of RevOpiD-2017. Is also the creator of the Amazon SNAP dataset, which was used for the RevOpiD-2017 shared task.

Avijit Thawani, IIT (BHU), Varanasi, India, avijit.thawani.cse14@itbhu.ac.in
A bright and enthusiastic undergraduate student, who was also a co-organizer of the RevOpiD-2017 shared task at IJCNLP-2017. Has already published a couple of research papers at international conferences.

Workshop and Submission Formats
Workshop Format (Tentative Schedule, assuming full day workshop): There will be four sessions, with three invited talks, two sessions for paper presentations and one for poster presentations. The last session will be for the shared task presentations (oral and poster).

Submission Format: Submission will be through an EasyChair account, as is common for research conferences. There will be 3 reviewers per paper. Reviewing will be double blind. Maximum page length will be 10 pages plus references. The ACM stylesheet will be used for formatting the papers. Proceedings will be prepared in the usual way and will be made available online. There will be no printed proceedings, but there may be a book of abstracts.

Length
Preferably full day, as it will also include a shared task. However, we are open to a half day workshop.

Publication
We plan to contact a prominent journal for publication of selected extended papers from the workshop in a special issue of the journal.

Potential Members of the Program Committee

Social Media Emilio Ferrara, USC Ingmar Weber Nishanth Sastry, King's College, London Haewoon Kwak, QCRI Opinions Paul Buitelaar, Galway Pearl Pu, EPFL Erik Cambria, NTU Kiran Garimella, Aalto University, Helsinki Fabrício Benevenuto, UFMG Ee-Peng Lim, SMU	NLP Kristina Lerman, USC Dan Goldwasser, Purdue Ernest Davis, NYU Jean Honorio, Purdue Kevin Gimpel, TTIC Xiang (Sean) Ren, USC Satoshi Sekine, NYU Robert West, EPFL Sun Aixin, NTU Chng Eng Siong, NTU Jonathan May, USC Nanyun Peng, USC Craig Knoblock, USC Pedro Szekely, USC Yolanda Gil, USC