PRODUCTS OPINIONS & NEWS

BAMK

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AGENDA

Topic

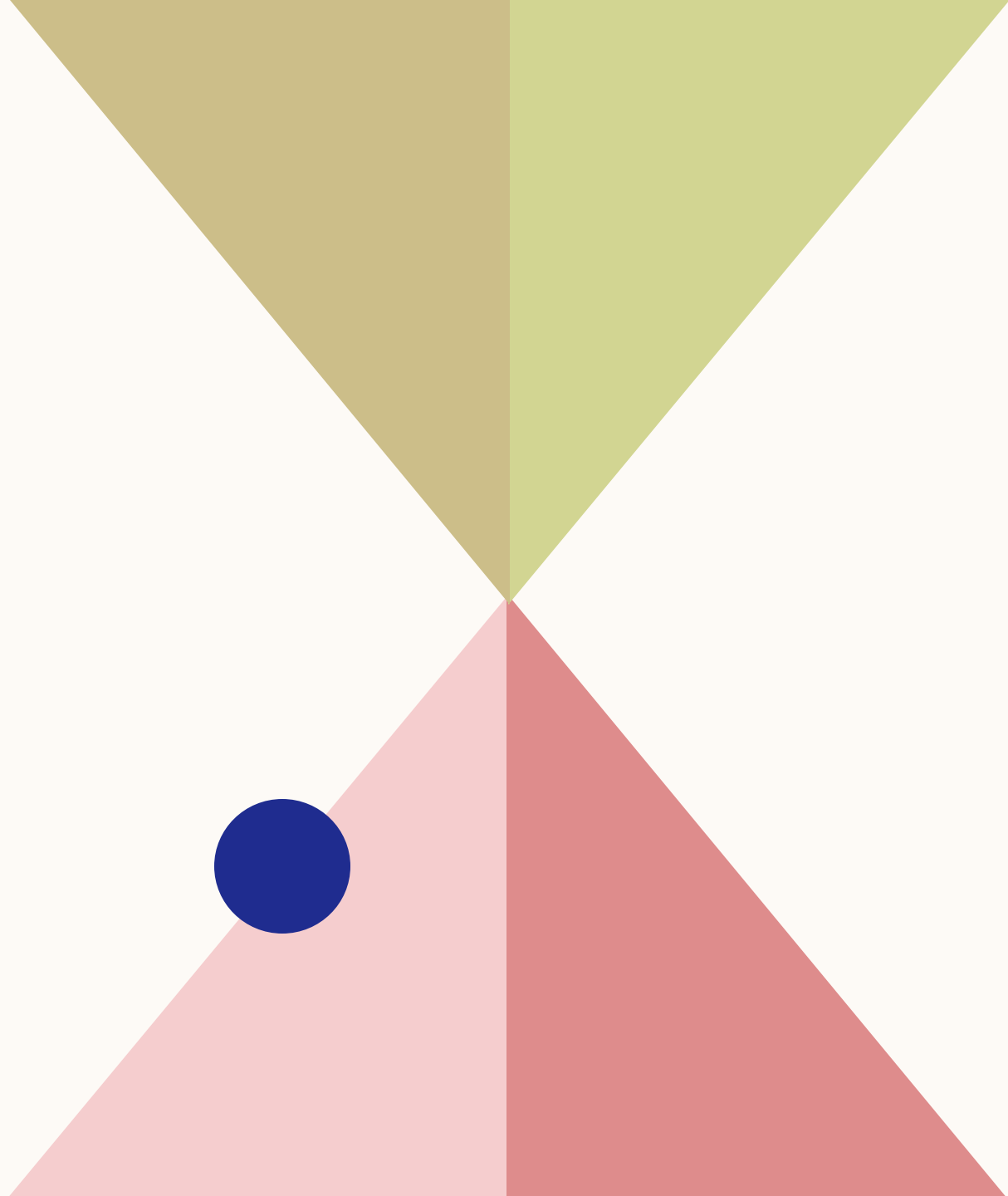
Literature

Datasets

State of the art

Solution concepts

Current focus



TOPIC

Project focuses on:

- **Sentiment** and **aspect-based** sentiment analysis of **product news articles**
- Finding **sentiment towards different mentioned product attributes**
- Identifying products and their attributes
- Intelligent presentation of the sentiment results

LITERATURE

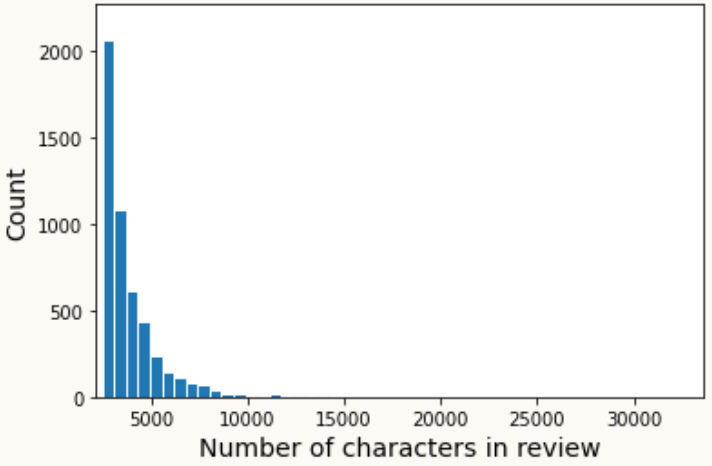
- Massively Multilingual Corpus of Sentiment Datasets and Multi-faceted Sentiment Classification Benchmark (Ł. Augustyniak, Sz. Woźniak, M. Gruza, P. Gramacki, K. Rajda, M. Morzy, T. Kajdanowicz)
- Erick Cambria works on sentiment analysis and affective computing (https://scholar.google.com/citations?hl=en&user=ilSYpW0AAAAJ&view_op=list_works&sortby=pubdate)
- SentiStrength (http://sentistrength.wlv.ac.uk/)
- NLP Progress (http://nlpprogress.com/english/sentiment_analysis.html)
- Effective Seed-Guided Topic Discovery by Integrating Multiple Types of Contexts (Y. Zhang, Y. Zhang, M. Michalski, Y. Jiang, Y. Meng, J. Han)
- Amazon reviews (https://arxiv.org/abs/2212.06002)
- Izabela Telejko, BSc thesis
- Generating Explainable Product Comparisons for Online Shopping. In Proceedings of the Sixteenth ACM International Conference on Web Search and Data Mining (N. Vedula, M. Collins, E. Agichtein, O. Rokhlenko)

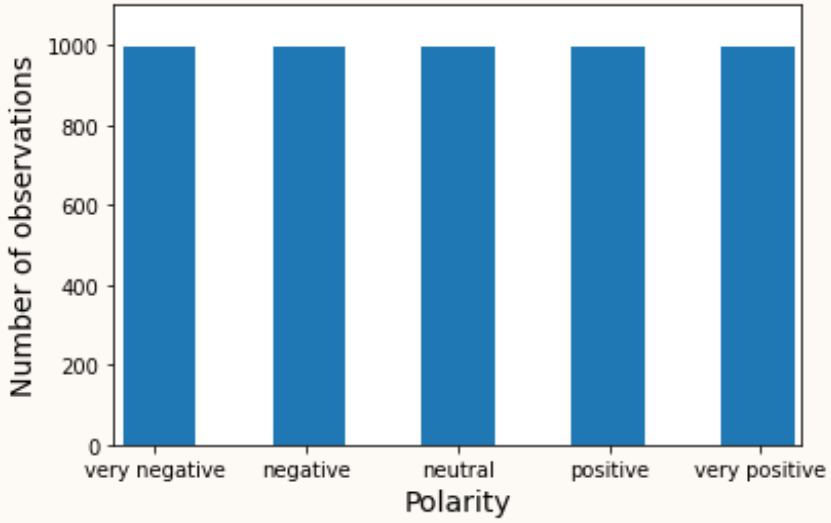
DATASETS

Testing the obtained results

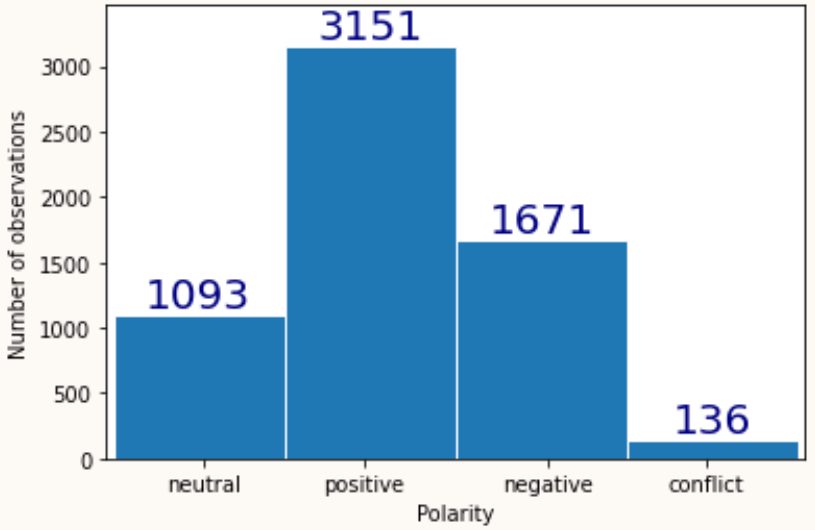
AMAZON REVIEWS

4000 longest reviews from over 20 000 000 in the Electronics dataset



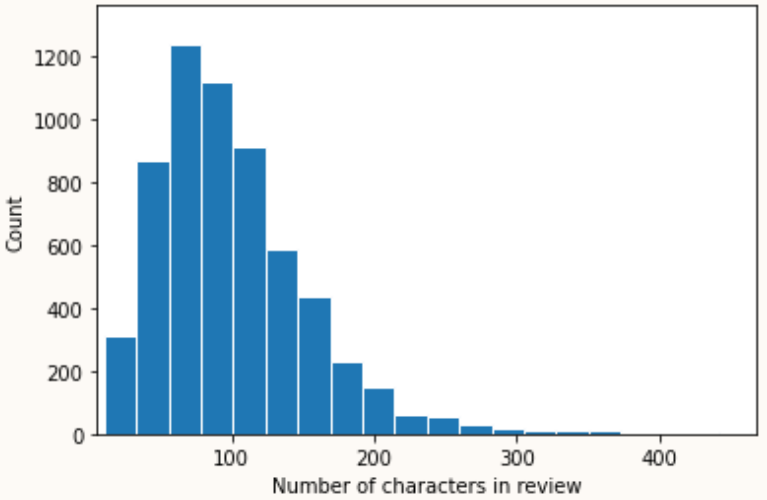


SEMEVAL-2014



kaggle

	Domain	Number of reviews	Number of aspects
0	Laptops	1482	2358
1	Restaurants	2019	3693
2	Total	3501	6051



STATE OF THE ART

What to use?

CHAT GPT


flair


spaCy

SENTISTRENGTH

*THIS IS IN FACT THE ONLY LOGO THAT WE'VE FOUND


Google
BERT

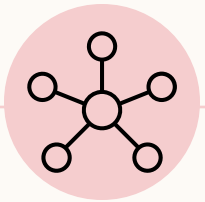
SOLUTION CONCEPTS

Make a use of the SOTA tools

AREAS TO COVER

OVERALL SENTIMENT

- Sentiment calculated on the whole text
- Can be also used in aspect based sentiment analysis
- Tools to use: Chat GPT, SentiStrenght, Flair



ASPECT BASED SENTIMENT

- Dividing sentences into chunks and calculating sentiment
- Can be done in two different ways
- Tools to use: Chat GPT, SentiStrenght, Flair, BERT

PRODUCT INFORMATION

- Extract product information from text
- Tools to use: Chat GPT, Flair

ABSA #1 – CHAT GPT

DATA	PROMPT ENGINEERING	ASK CHAT GPT	REFORMAT RESPONSE	PRESENT THE RESULTS
Collect the data and transform it to suitable form	Prepare and test well defined prompts that allow Chat GPT to work flawlessly	Send the query to the Chat GPT	Receive response from Chat GPT and format it to well-structured objects in Python	Use visualization techniques to present the results

ABSA #2 – FLAIR/SPACY + SENTISTRENGTH

DATA	FLAIR/SPACY EXTRACTION	SENTISTRENGTH ANALYSIS	REFORMAT RESPONSE	PRESENT THE RESULTS
Collect the data and transform it to suitable form	Extract keywords and subjects of sentence	Use keywords from previous step to analyze sentence in SentiStrength tool	Receive results from SentiStrength and format it to well - structured objects in Python	Use visualization techniques to present the results

ABSA #3 – CHAT GPT + SENTISTRENGTH

DATA	CHAT GPT EXTRACTION	SENTISTRENGTH ANALYSIS	REFORMAT RESPONSE	PRESENT THE RESULTS
Collect the data and transform it to suitable form	Extract keywords and subjects of sentence with Chat GPT using prompt engineering	Use keywords from previous step to analyze sentence in SentiStrength tool	Receive results from SentiStrength and format it to well - structured objects in Python	Use visualization techniques to present the results

ABSA #4 – CHAT GPT + FLAIR

DATA	CHAT GPT ANALYZE	FLAIR ANALYSIS	REFORMAT RESULTS	PRESENT THE RESULTS
Collect the data and transform it to suitable form	Chat GPT would divide text into chunks with assigned attribute	Flair would analyze each chunk separately	Take results from Flair and format it to well-structured objects in Python	Use visualization techniques to present the results

ABSA #5 – BERT

DATA	DOWNLOAD AND IMPLEMENT	ASK BERT	REFORMAT RESPONSE	PRESENT THE RESULTS
Collect the data and transform it to suitable form	Bert needs to be downloaded and prepared since it is not implemented in Python package	Pass the text to Bert	Receive response from Bert and format it to well-structured objects in Python	Use visualization techniques to present the results

CURRENT FOCUS

What are we planning for now?

THANK YOU

Q&A