

# Comparative Opinion Summarization for Consumer Electronics Reviews in Portuguese

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## Areas of Research

- Computer Science
  - Artificial Intelligence
    - Natural Language Processing
      - Sentiment Analysis

## Schedule

- Master's project
  - Start date: March 2017
  - End date: March 2019 (estimated)

## Overview

- Task: **Comparative Opinion Summarization**
  - **Automatic summarizer:** a system that is capable to automatically select the most important excerpts of a text written in human language.
  - **Opinion summarizer:** an automatic summarizer that is specifically built to consider subjective texts:
  - **Comparative opinion summarizer:** a system for opinion summarization which computes data about two entities at a time to highlight their main differences.

## Goals

- To build software systems capable to produce comparative opinion summaries of reviews about consumer electronics written in Portuguese.
- To investigate how methods for other languages can be adapted to Portuguese.
- To do experiments and evaluate the systems' performances in different scenarios.

## Contributions

- Present a theoretical basis for tools that:
  - Help consumers use other people's opinions to decide among a set of options.
  - Allow manufacturers to have a report of their consumers' opinions and how they compare with other companies.

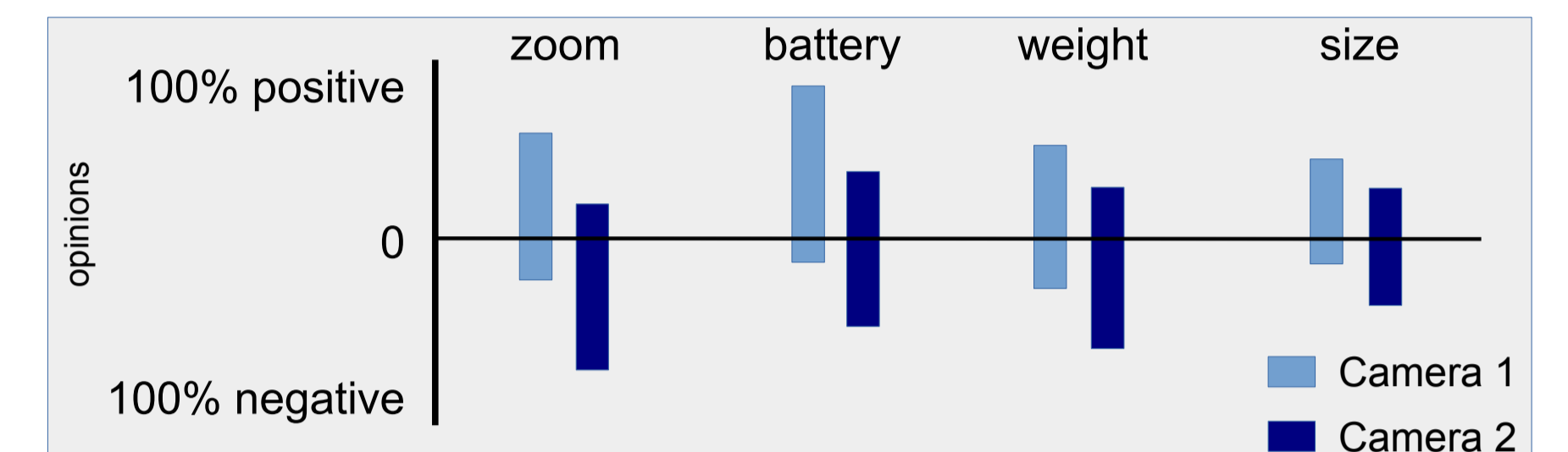
## Challenges

- Informal language
  - "You bet this keyboard is super sick!"
  - "u gon luv 2 use it"
- Grammatical and orthographic errors
  - "I was expected more it stoped workin fast" (sic)
- Implicit opinions
  - "This cell phone hardly fits in a pocket."
- Irony and sarcasm
  - "This iron is so good, it doesn't even heat!"
- Similar sentences, opposite meanings
  - "This brand has never been good!"
  - "This brand has never been so good!"
- Same sentence, opposite meanings
  - "Everything happens just like expected."
    - 👍 positive when describing a device usage
    - 👎 negative when talking about a movie
  - "It doesn't produce loud sound."
    - 👍 positive for a blender
    - 👎 negative for a speaker
  - "It really sucks!"
    - 👎 usually negative
    - 😐 ambiguous for a vacuum cleaner
- Not straight to the point
  - "My son bought one for his girlfriend and he told me it was not as durable as he expected."
  - "I won't say I don't like it but it isn't the best phone I've owned."

## Related Work

For English:

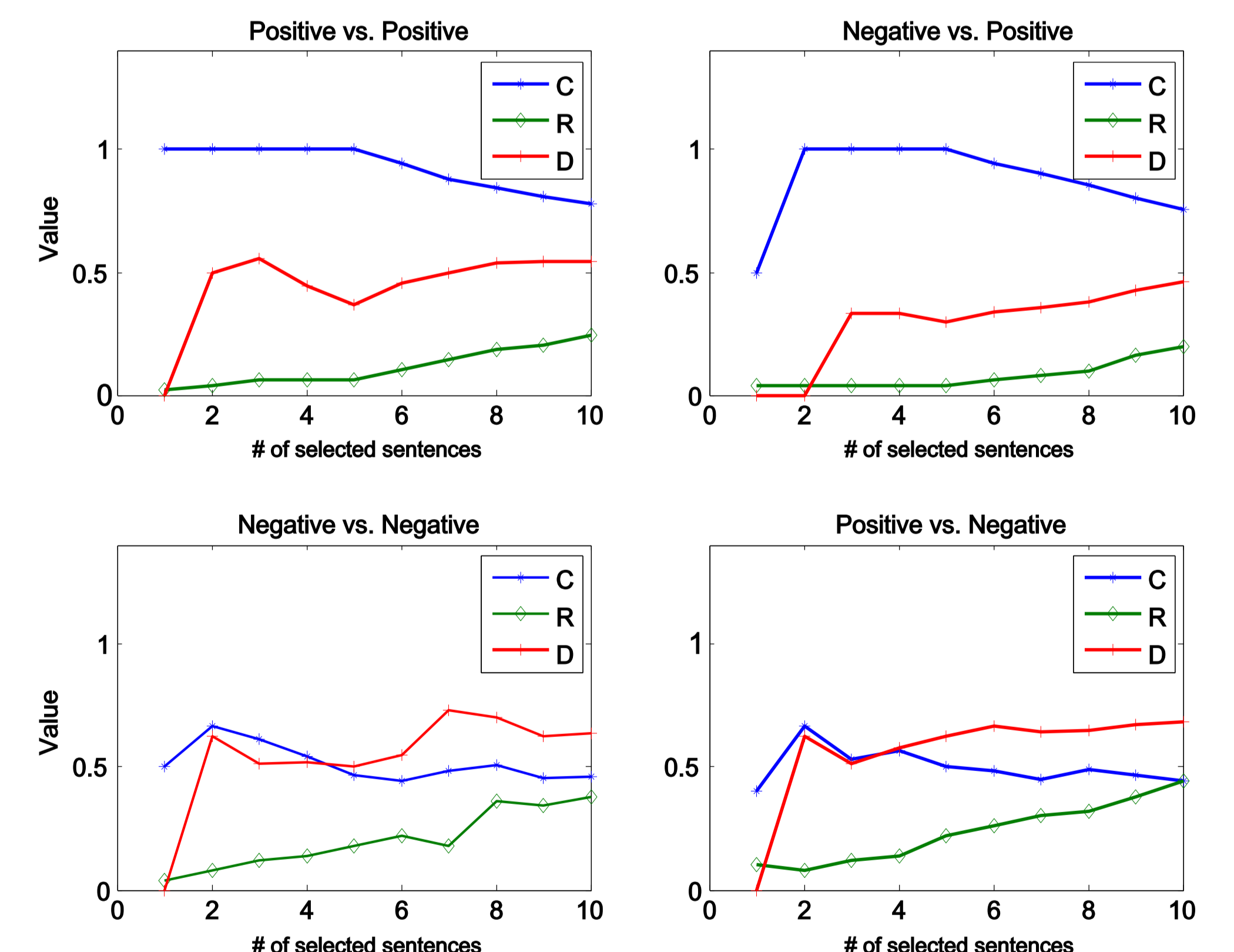
- Liu et al. (2005) made a system that graphically compares opinions for features of products.



- Kim and Zhai (2009) developed a system that extracts comparable sentences from sets where the text is already separated into positive and negative opinions.

Positive Opinions	Negative Opinions
oh ... and file transfers are fast & easy.	you need the software to actually transfer files
i noticed that the micro adjustment knob and collet are well made and work well too	the adjustment knob seemed ok, but when lowering the router, i have to practically pull it down while turning the knob.
the navigation is nice enough , but scrolling and searching through thousands of tracks , hundreds of albums or artists , or even dozens of genres is not conducive to save driving .	difficult navigation - i wo n't necessarily say " difficult , " but i do n't enjoy the scrollwheel to navigate .
i imagine if i left my player untouched (no backlight) it could play for considerably more than 12 hours at a low volume level.	there are 2 things that need fixing first is the battery life. it will run for 6 hrs without problems with medium usage of the buttons.

- Jin et al. (2016) did experiments exploring three different approaches to optimize the generation of comparative summaries.



## References

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- KIM, H. D.; ZHAI, C. X (2009) Generating Comparative Summaries of Contradictory Opinions in Text. Proceedings of the 18th ACM Conference on Information and Knowledge Management, p. 385-394, Hong Kong, Dec. 2009. ACM, New York, NY, USA. ISBN 978-1-60558-512-3. DOI 10.1145/1645953.1646004.
- LIU, B.; HU, M.; CHENG, J. (2005) Opinion Observer: Analyzing and Comparing Opinions on the Web. Proceedings of the 14th International Conference on World Wide Web, p. 342-351, Chiba, Japan, 2005. ACM, New York, NY, USA. ISBN 1-59593-046-9. DOI 10.1145/1060745.1060797.

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project supporters

