



PRODUCT REVIEW TOPIC MODELING

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PREMISE

Panasonic, after pulling out from the US market in 2016 , are planning a launch of a new TV.

They are doing market research on other brands.

As a initial research, they decided to use Amazon TV reviews to gather further information.

INTRODUCTION

Motivation:

Market Research for TV Brands

Objectives:

Using NLP to extract useful topics to compare and contrast from reviews

Goal:

Utilize the topics to enhance our own product before launch

WORKFLOW



LDA



pyLDAvis

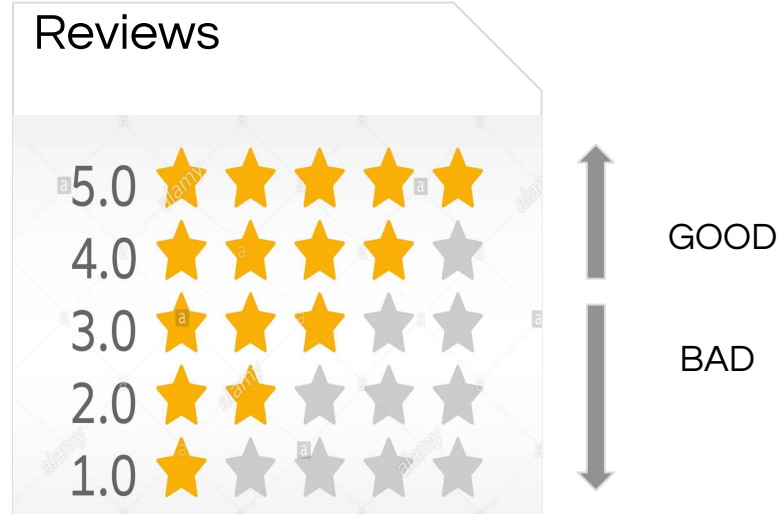


Topics

Words

DATA

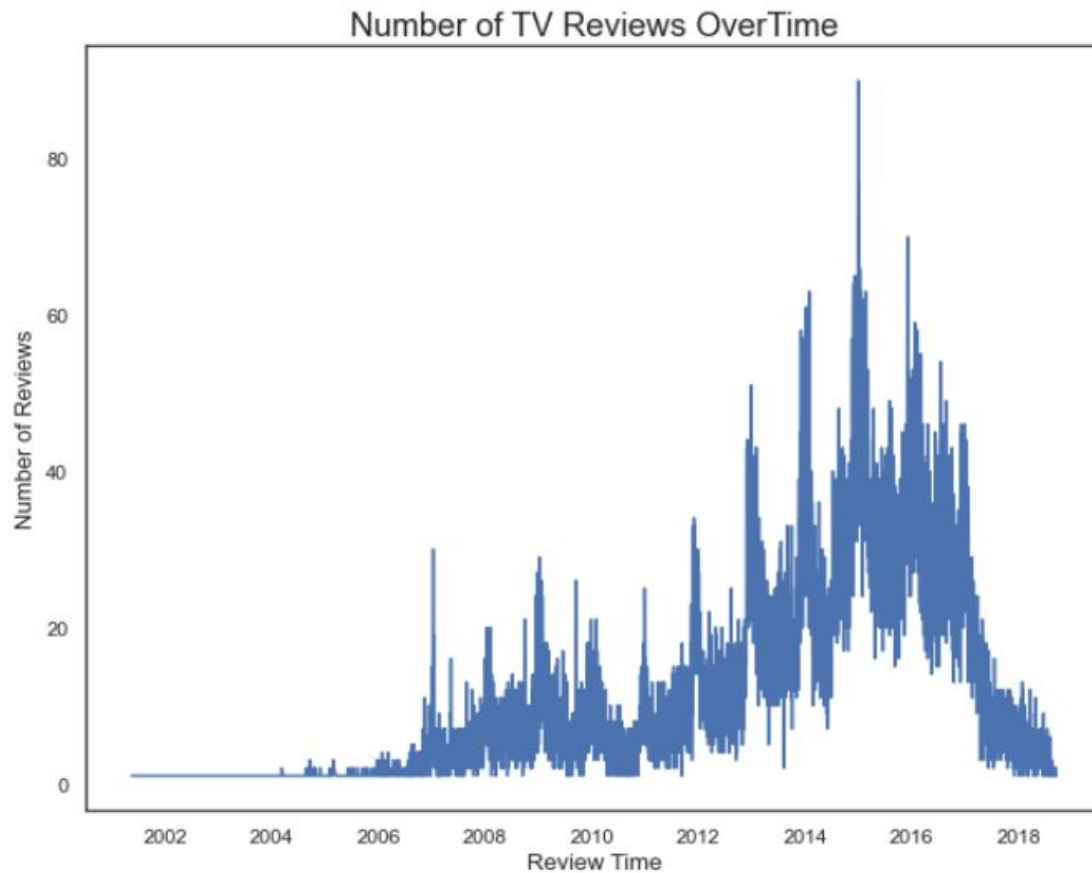
- Amazon TV Reviews
- 66,102 Data Points(2001 to 2018)
- 30 Features(review text, price, overall)
- 10 Different Brands
- 1,463 Unique Products
- 56,356 Unique Reviewers
- Average Rating : 4.23
- 1 Additional Feature 'Rating' Added



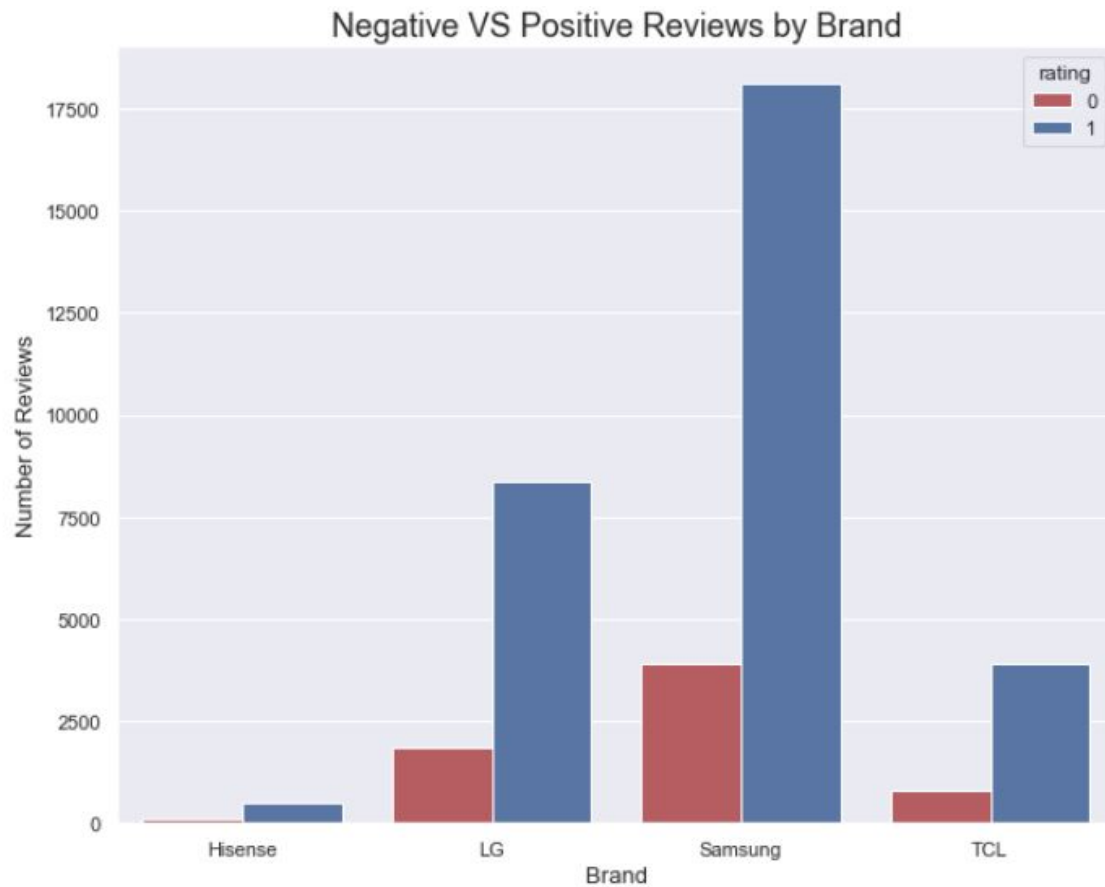


EDA

EDA

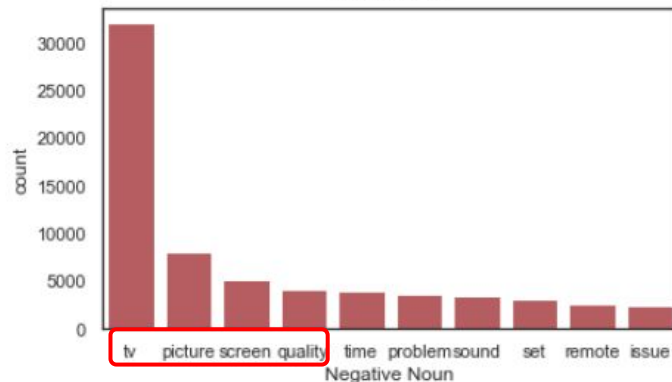
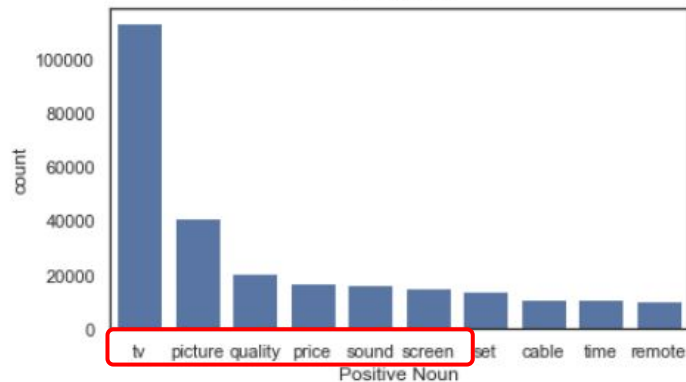
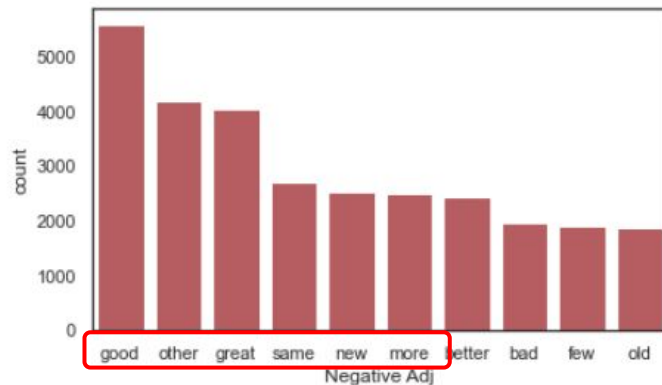
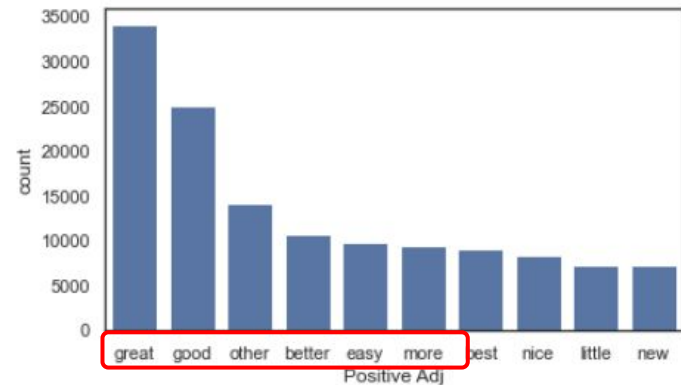


EDA



EDA

Part Of Speech Analysis by Sentiment



LDA VS NMF

Network Work Problems
Don Connect Wireless
Issues

LDA

Quality, Poor, TV, Picture,
Return, Line, Vertical,
Fire, Image, Pleased

NMF

LDA

LDA topics were more
coherent



LDA

LDA

Entire Data Set

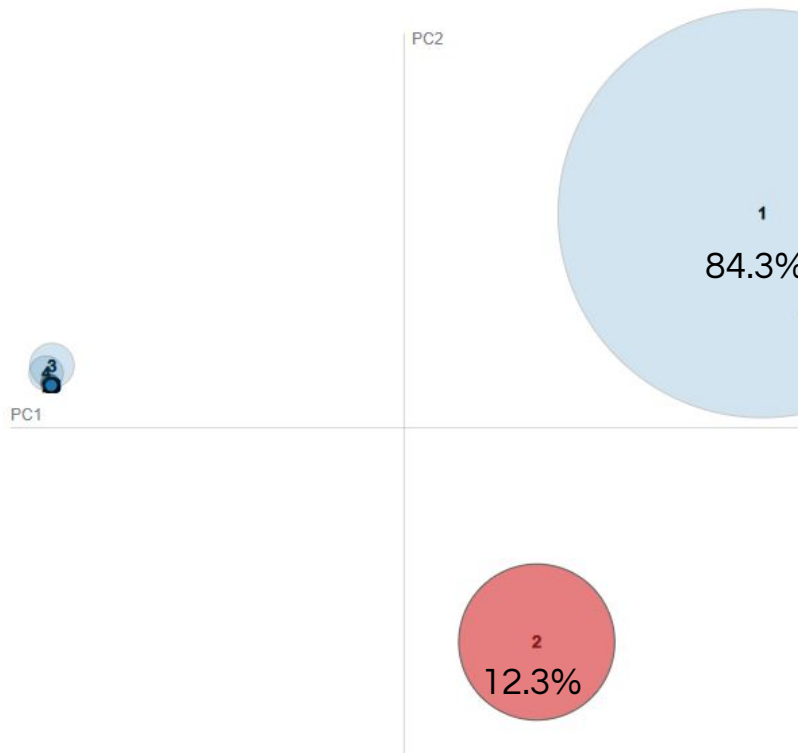
Selected Topic: Previous Topic Next Topic Clear Topic

Slide to adjust relevance metric:(2)

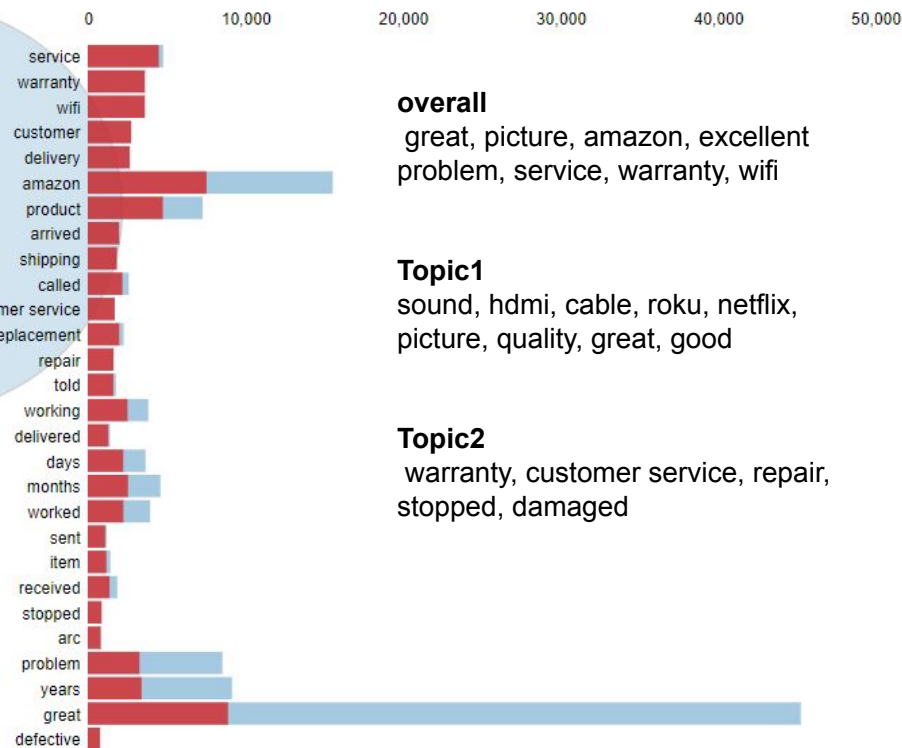
$\lambda = 0.4$

0.0 0.2 0.4 0.6 0.8 1

Intertopic Distance Map (via multidimensional scaling)



Top-30 Most Relevant Terms for Topic 2 (12.3% of tokens)



overall

great, picture, amazon, excellent
problem, service, warranty, wifi

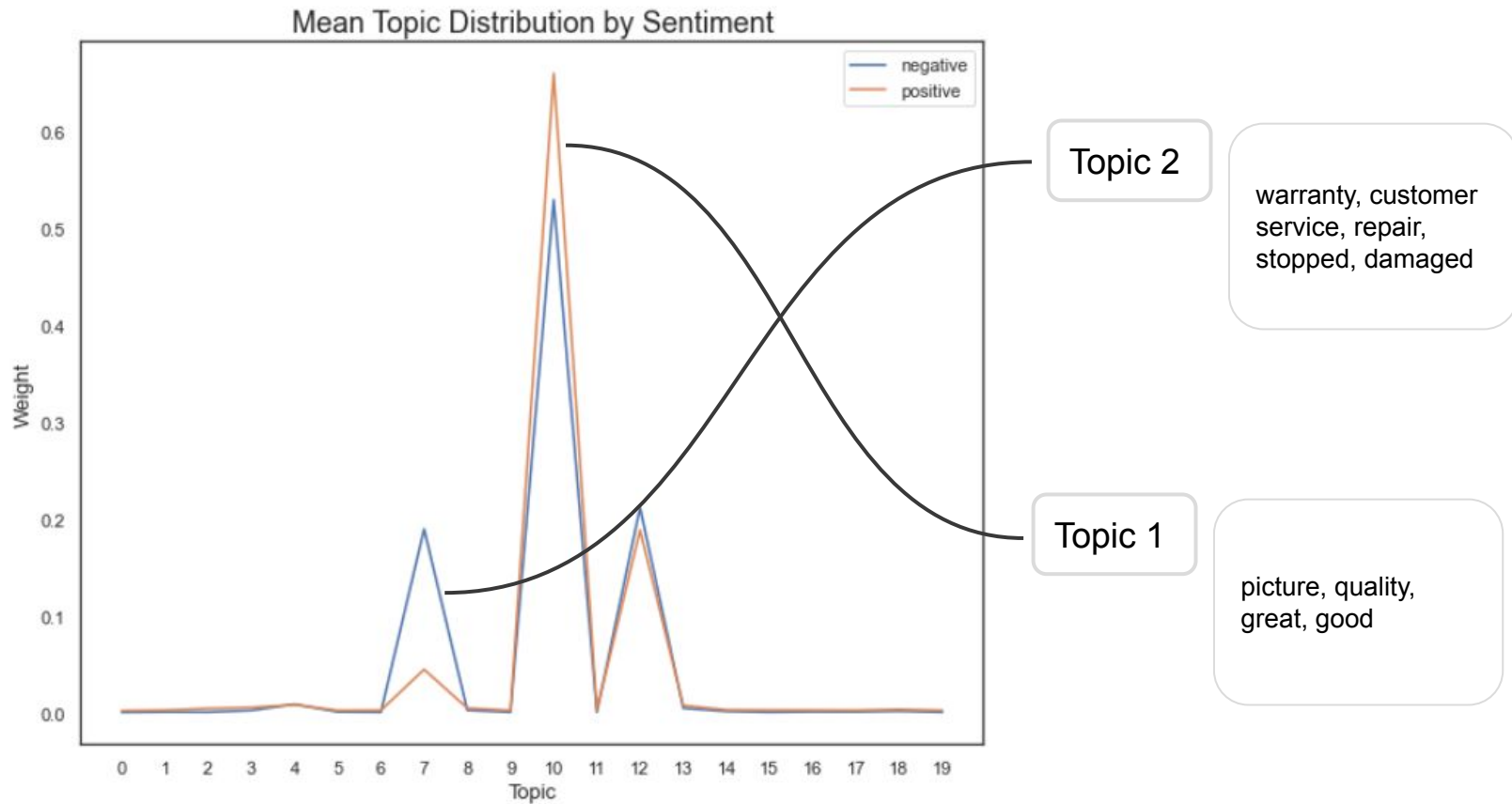
Topic1

sound, hdmi, cable, roku, netflix,
picture, quality, great, good

Topic2

warranty, customer service, repair,
stopped, damaged

LDA



LDA

Hisense - Neg

- Topic 1 - picture/screen quality
- Topic 2 - network/ wifi connection
- Topic 3 - wireless connection
- Topic 6 - motion interpolation

TCL - Neg

- Topic 1 - mounting screws/strip/arm
- Topic 2 - blink
- Topic 3 - wifi/unable connect
- Topic 15 - high pitch/squealing

Samsung - Neg

- Topic 1 - dark scenes blur
- Topic 2 - customer support/warranty
- Topic 3 - roku app, apps

LG- Neg

- Topic 1 - native resolution/aspect ratio
- Topic 2 - active HDR, auto adjust
- Topic 3 - refresh rate, bleeding, edge

CONCLUSION

Top Areas of Concern

- Wifi Connection
- Software Issues
 - Application compatibility
 - Auto screen correction
- Hardware Issues
 - Wifi connector
 - Hdmi
 - Screws/mounts

FUTURE WORKS

- Try hard clustering methods
- Incorporate topics as features in a regression model