



Opinion Mining

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Outline



Sentiment Table (exp. product)



3 Main Tasks



Conclusions

01

Part One

Sentiment Table

1-1 Example

Sentiment Summary Table, Product Id: B000A4AWE0

Count.

Example Sentences.

	id	feature	pos	neg	neu	posString	negString	neuString	total
▶	1	office	0	0	1			I would be growling instead!...	1
	2	install	0	0	1			The installation from the inc...	1
	3	software	0	0	1			(For those who may not be f...	1
	4	connection	0	1	0		I have no reason t...		1
	5	instructions	0	0	1			It had instructions that were...	1
	6	paper	1	0	1	I was able to op...		I would be growling instead!...	2
	7	setup	0	2	4		I have no reason t...	And being a wireless print s...	6
	8	device	2	0	2	It was one of th...		The fact that you can have y...	4
	9	part	1	0	0	The TRENDnet s...			1
	10	mode	0	0	7			This doesn't mean you will h...	7
	11	function	0	0	1			I was at a point to give up o...	1

02

Part Two

Tasks

2-1 Summarization

Mock Up (1) Features

Feature: Circles.

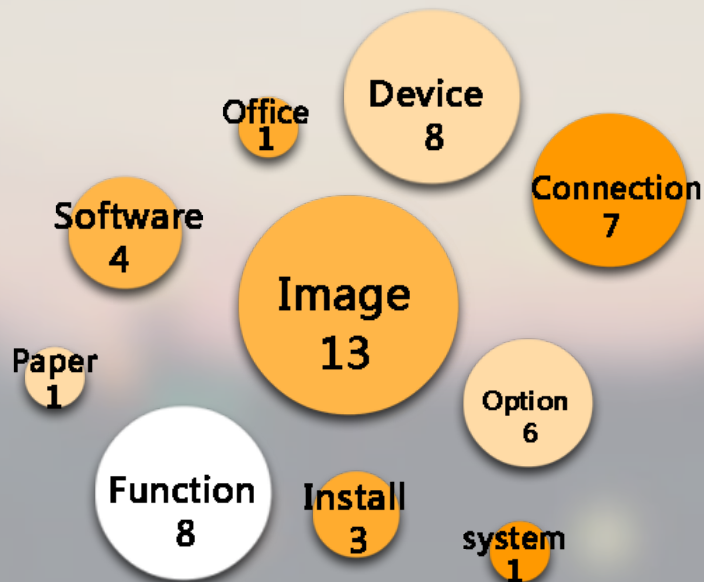
Radius: Neu+Pos+Neg ... Hot?

Color: Pos/(Pos+Neg) ... Good?

Positive Ratio



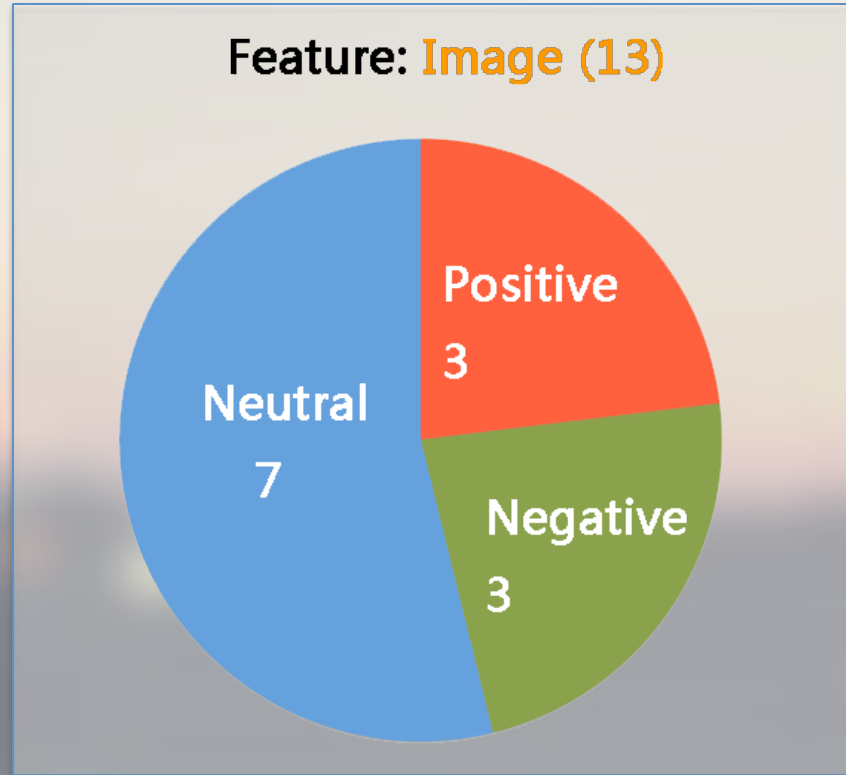
Features for: **B0032NXZA**



2-1 Summarization

Mock Up (2)

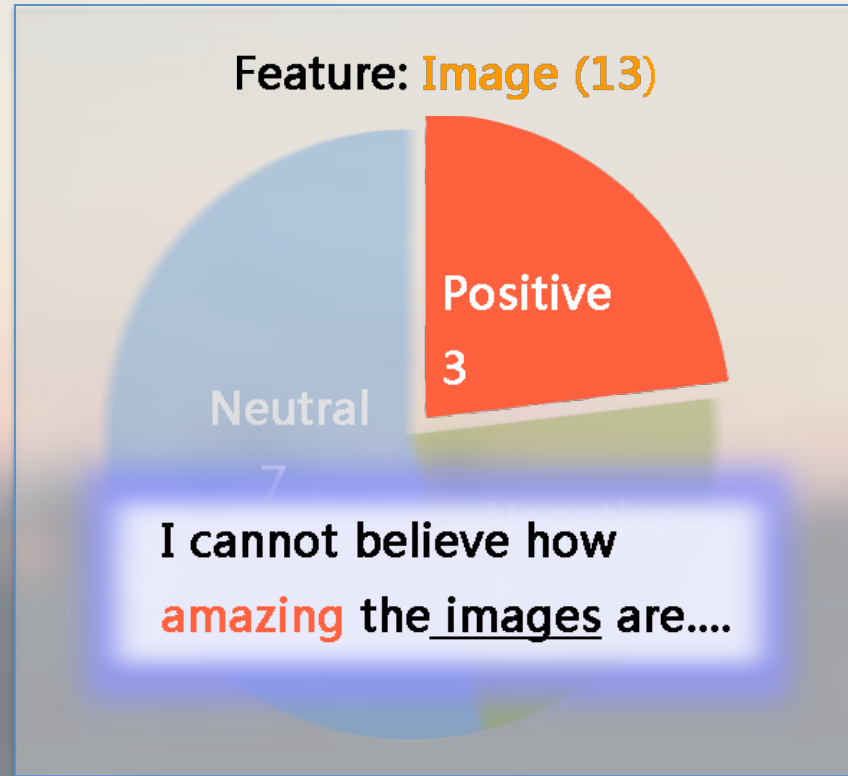
Feature Details



2-1 Summarization

Mock Up (3)

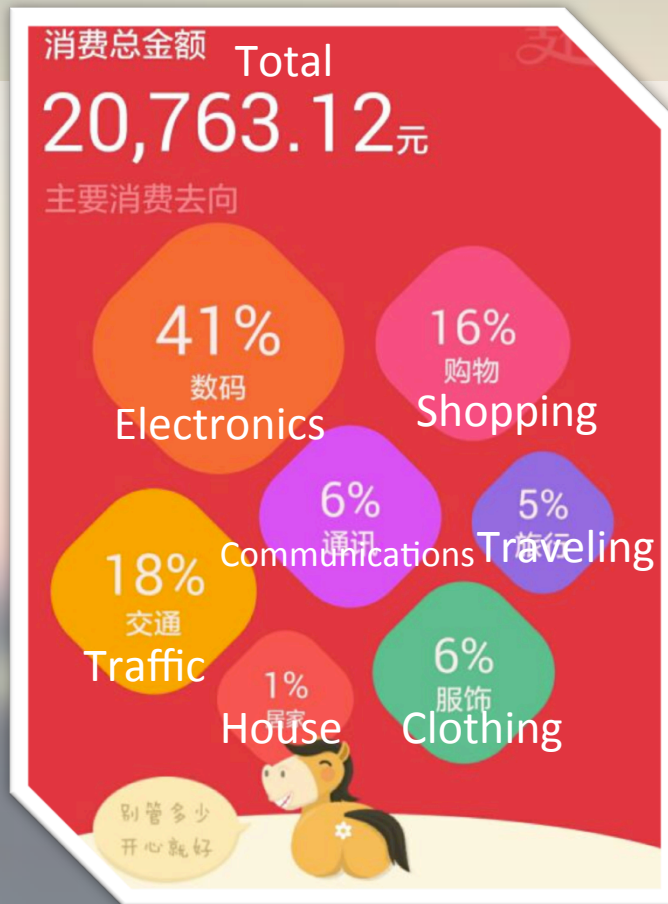
Example Sentences



2-1 Summarization

Reference

A shopping statement.
Taobao (Chinese Amazon)



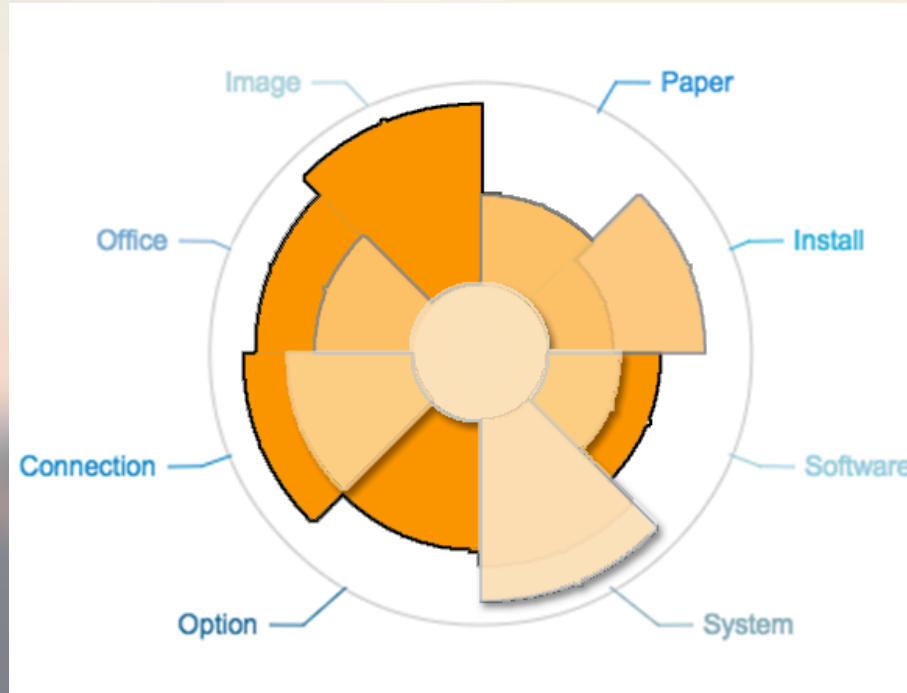
2-2 Comparison

Mock Up (1)
Feature
Comparison

Radius : Positive Ratio

Colors : Products.

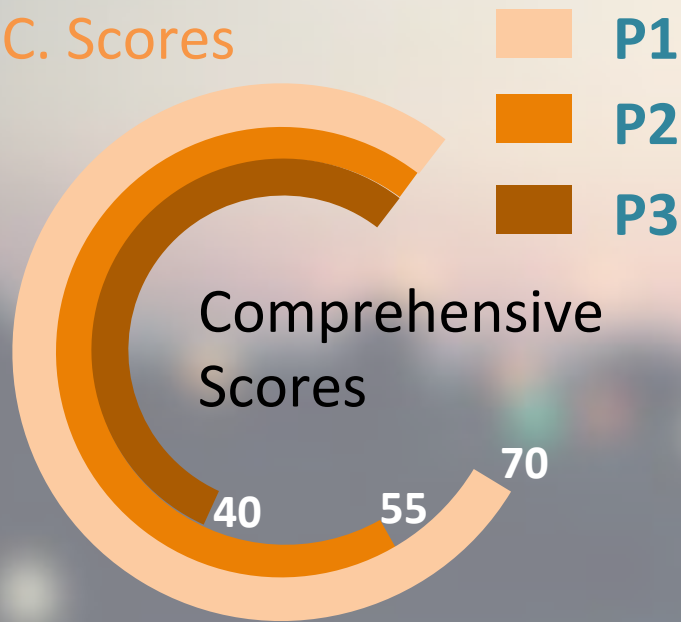
Nightingale Roses Pie Charts



2-2 Comparison

Mock Up (2)

C. Scores



Score: **Sentiment** + **Rating** (both weights 0.5)

$$score(P) = 0.5 \times \sum_{Fi \in P} PR(Fi) \times weight(Fi) + 0.5 \times \frac{r}{5}$$

PR (Fi) : Positive Ratio

Pos/(Pos + Neg)

Weight(Fi) : Feature Ratio

Total (Fi) / Total (F)

r : Product Mean Rating (normalization)

2-3 Rec. & Exp.

Mock Up

Comparison on Better (Fi, Q, C)

















Green better

Red worse

Blue same

Recommendations ? Why?

You might also like these products, they have **similar** and **better** performances on some features...

	P 1	P 2	P3	P4
Rel				
image				
office				
connection				
option				
paper				

A User said:
The image
is amazing....

03

Part Three
Conclusions

3-1 Challenges



- **NLP: Patterns? Smart ?**
- **Performance of Algorithms.**
- **UI Design.**

3-2 Limitations



- **Explanations: User-based – Personalized.**
- **Helpfulness: Weights.**

3-3 Future Works



- **Dynamic Scoring System**
- **Improvements on Learning Algorithms.**



Thank You !

Q&A