

# Using Distributed Representations for Aspect-Based Sentiment Analysis

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# What is Aspect-Based Sentiment Analysis?

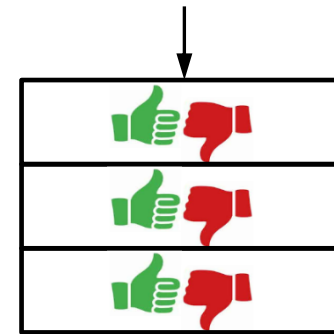
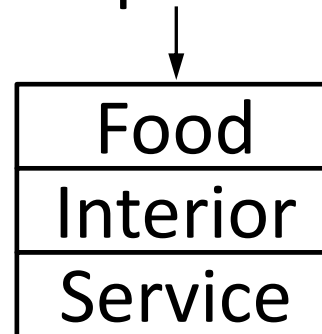
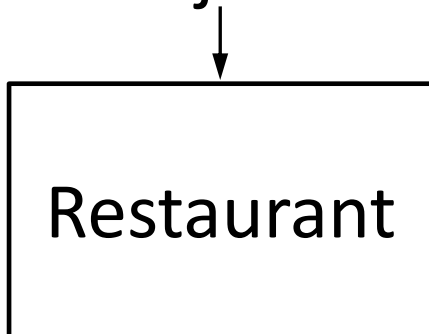
Sentiment analysis on the level of:

- Whole text
  - Separate sentences
- } It is too coarse

«В целом еда понравилась, но обслуживание ужасное» → Sentiment???

Sentiment analysis on the level of aspects is better

Object comprises of the aspects with sentiments



# The Data

- Restaurants reviews ([goo.gl/NhEvWu](http://goo.gl/NhEvWu))
- 3 aspects: Food, Interior, Service
- Binary sentiment scale

Aspect	Positive reviews	Negative reviews
Food	10 063	5 222
Interior	11 296	3 989
Service	8 707	6 578

# The Solution

is based on distributed representation of words,  
i.e. each word matches to a N-dimensional  
vector

3-step approach:

- Extract aspect terms
- Find sentiment phrases
- Calculate score for the aspects

# Aspect lexicon construction

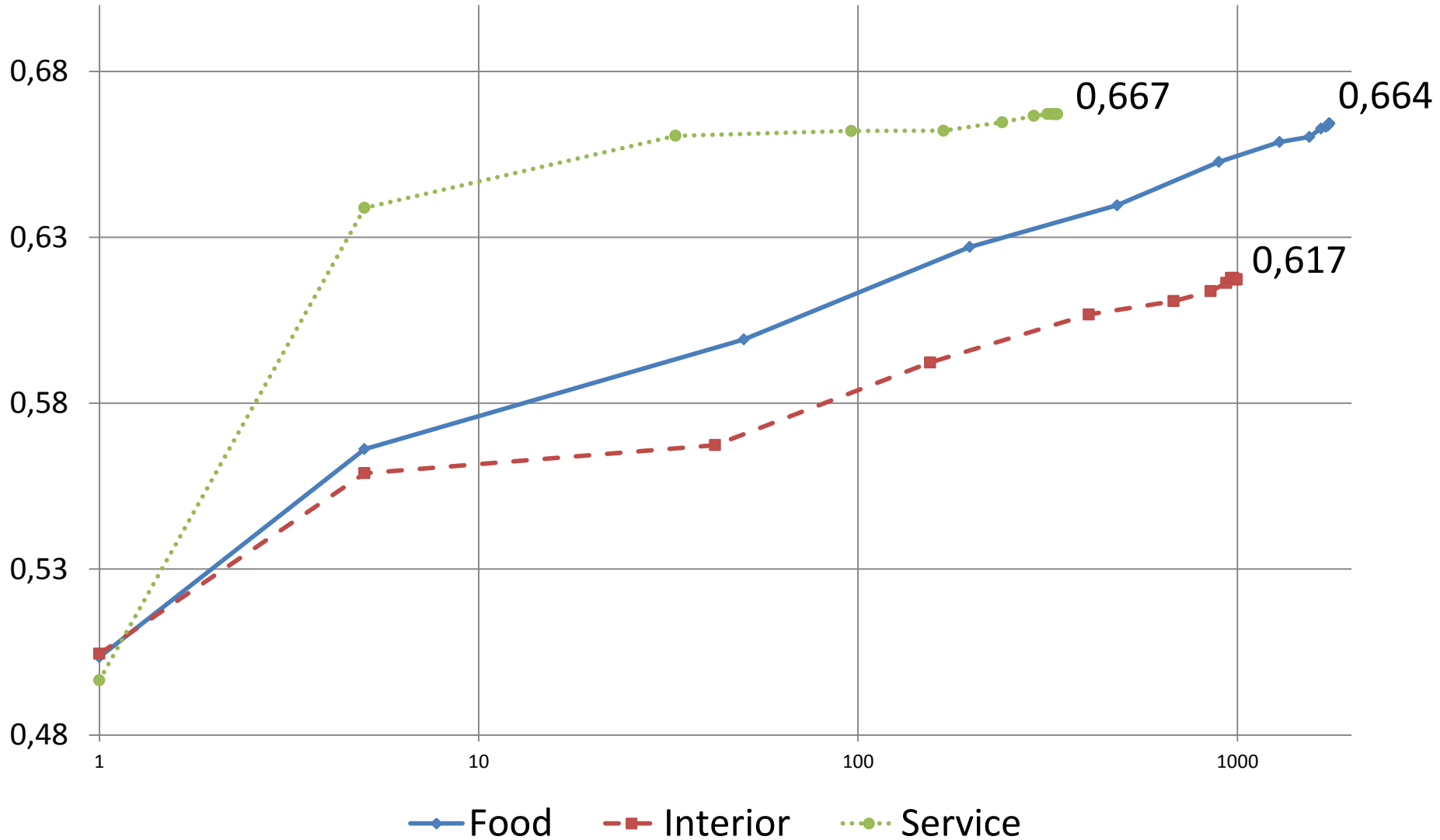
Through initial set of words for each aspect:

- Food. From (закуска, суп, десерт, салат, плов) to 1 749 terms
- Interior. From (интерьер, атмосфера, музика, дизайн, бар) to 996 terms
- Service. From (обслуживание, персонал, официант, менеджер, сервис) to 335 terms

# Sentiment lexicon construction

- Select candidates (7 312 in total):
  - pattern: <very | not> + <very | not> + <adj | verb | adv>  
*(не\_довольный, очень\_сытный, не\_очень\_опрятный, ...)*
  - adjectives  
*(атласный, адский, мягкий, горелый, ...)*
- Weight through cosine similarity to “great” and “terrible”

# Experimental results (F1)



Thank you!