

NLP 技术在 eBay 的技术实践

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About Me

- Bachelor + Master @ ZJU
- Ph.D @ UC Riverside
- 10 Year Industrial Experience
 - Image and video processing
 - Intelligent video surveillance
 - Video stabilization
 - License plate detection, recognition
 - Data scientist/tech lead at eBay



About eBay



- Founded by [Pierre Omidyar](#) in 1995
- Has **Marketplace, Stubhub** and **eBay Classified**
- Marketplace has sites in > 25 countries
- 169 million active buyer
- \$20B revenue in Q1 2017
- One of the pioneer companies to use big data



Americas

Argentina *
Brazil *
Canada
Colombia *
Mexico *
United States

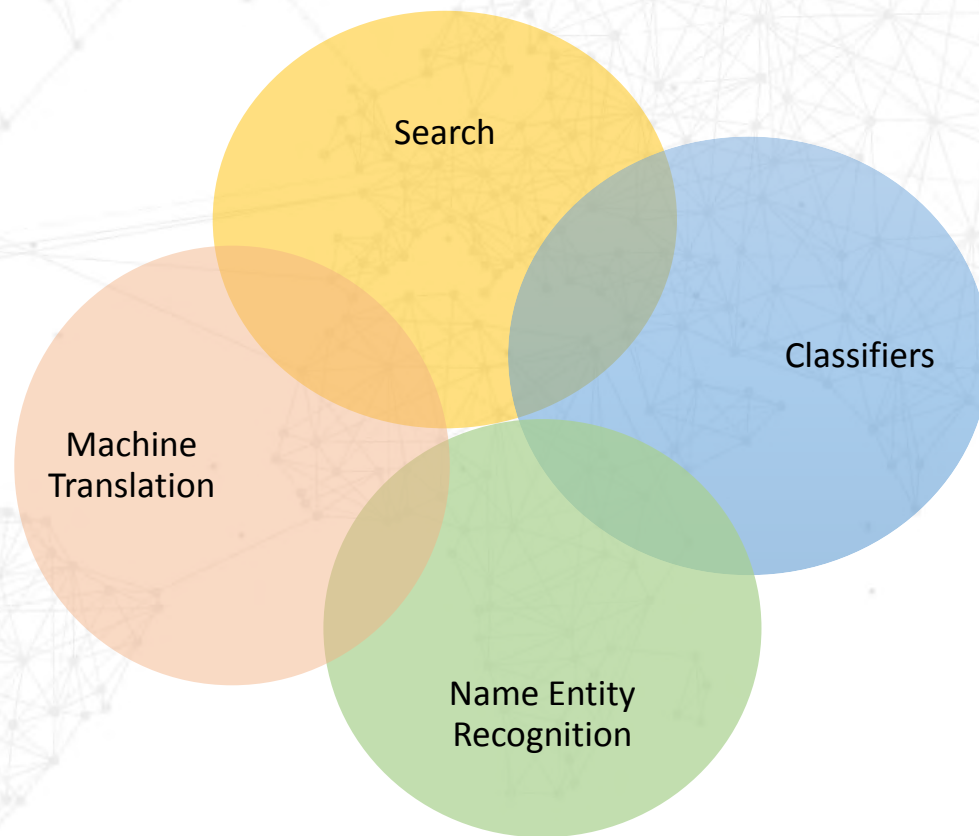
Europe

Austria Netherlands
Belgium Spain
France Sweden
Germany Switzerland
Ireland United Kingdom
Italy

Asia/Pacific

Australia New Zealand
China Philippines
Hong Kong Singapore
India Taiwan
Korea *
Malaysia

NLP at eBay



NER

Condition Brand Model Storage capacity Contract Color Type

New Apple iPhone 6S 16GB AT&T Locked Space Gray Smartphone



This smartphone is LOCKED and will only work with AT&T. Not much has changed on the surface since the iPhone 6 introduced an updated look with a laminated screen and comfortably round corners. Other notable additions...

★★★★★ 84 product ratings

\$409.99

Trending at \$420.00 ⓘ

FAST 'N FREE

11 watching

[See more like this](#)

Top Rated Plus

Brand: Apple

Applications:

- Enrich user filled in attributes for the item → help MT, search
- Discover new values for attribute dictionary

Classifiers

- Classify items to categories – category recommendation
- Classify items to product/accessory/bundle
- Classify items to product types
- Classify reviews to real product reviews/others
- ...

Example: Item Category Recommendation


Problem

- Classify item to leaf category (>16k categories)
- If doing randomly, accuracy < 0.00625%

Progress over the past 10 years

- 2006 ~ 2011: Histogram + Naive Bayesian ~ **50%** top1 accuracy
- 2011 ~ 2015H1: KNN based on search engine () : ~**73%** top1 accuracy
- 2015H2: KNN + SLM : ~**81%** top1 accuracy
- 2017: DNN: ~**90%** top 1 accuracy

Example: Product/Accessory/Bundle Classifier



Olympus OM-D E-M5 Black Body Camera with 14-42mm Black Lens OMD EM5

Top-rated seller

15d 15h left
11/10, 10AM

\$1,099.99
Buy It Now

Free shipping

Bundle



Olympus M.Zuiko 14-42mm Micro Lens PEN E-P3 E-PL2 E-PL3 E-PM1 OM-D E-M5 Camera


Top-rated seller

28d 15h left
11/23, 10AM

\$114.95
Buy It Now

Free shipping

Accessory



Olympus OM-D E-M5 16MP Live MOS Interchangeable Lens Digital Camera Black Body

Top-rated seller

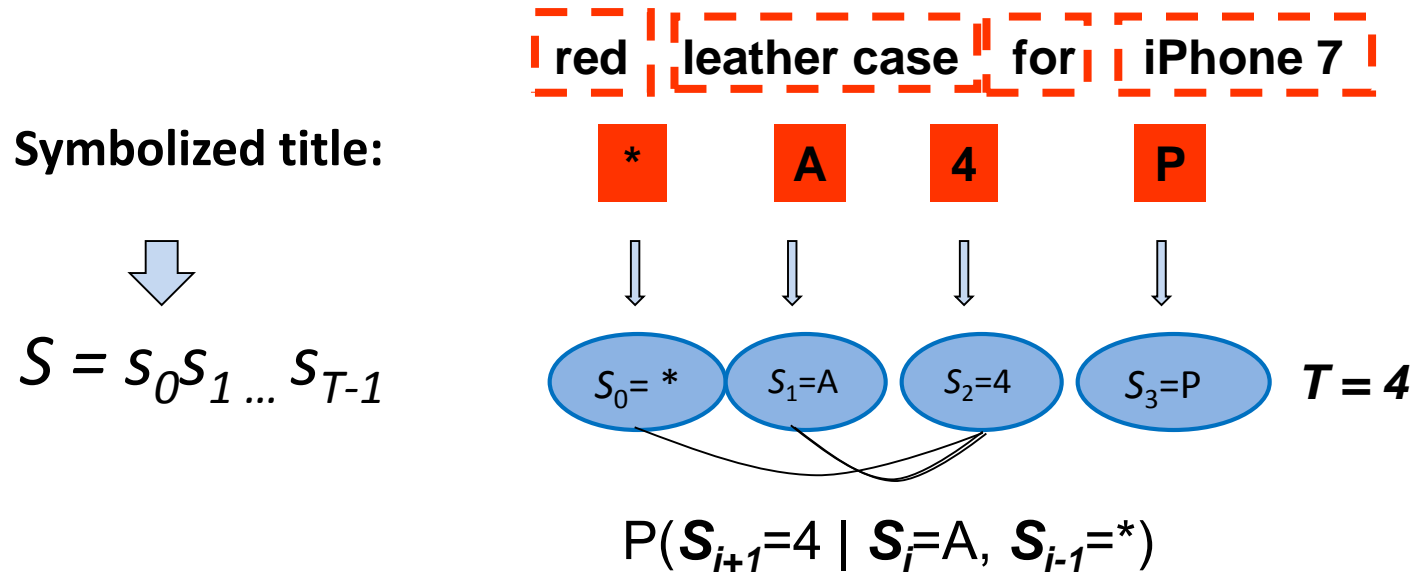
7d 14h left
11/2, 10AM

\$999.99
Buy It Now

Free shipping

Product

Main idea: build SLM on symbolized titles



Q & A