I need a gaming laptop around 1000$?

You should buy from retailer ABC, because:
+ Hardware …
+ Price …

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Outline

1. Problem description and motivation
2. Proposed methods
   1. Technologies
   2. Collaborations
3. Impact
   1. Science
   2. Society
   3. Collaborations
4. Outcome
   1. Science
   2. Society
5. Conclusion
- Online shopping is booming in Vietnam and Asian countries:
  + Revenue = $2,709m in 2019.
  + Annual value growth 65% (Fig. 1)
  ⇒ Market volume (MV) = $4,537m by 2023.

  + largest segment: Electronics & Media (MV = $685m in 2019)

Fig. 1 Source: Kantar Worldpanel (2017)
Our mission: Support customers in shopping online
Proposed Method (1/3): Technologies for building the system

Technologies:
1) IMP – Image Processing
2) NLP – Natural Language Processing
3) SP – Speech Processing

name = laptop
brand = Dell
usage purpose = graphic design
price = 1000$

Laptop Dell for graphic design, 1000$

Data

Retailers

Lazada
Shopee
Sendo.vn

TIKI

Customers

Comments

crawler

Recommender system

NLP

IMP

Laptop Dell

......
Proposed Method (2/3): Process of recommendation

Goal: to determine the expected product from the query

- Laptop ASUS TUF Gaming FX505GD-BQ012T
- Laptop ASUS
- Laptop DELL
- Laptop ACER

Recommender system

Visualization

- CPU: Intel Core i5-8300H 2.3GHz
- RAM: 8GB DDR4 2666MHz
- ....
Proposed Method (3/3): Collaborations

1. Research:
   Problems are trend in areas
   1) Speech → text: speech recognition, text correction, …
   2) User intention understanding: text analysis, language understanding, …
   3) Searching products by images: image retrieval, …
   4) Mining big data of ecommerce & social knowledge

2. Application and deployment
Impact: on Science and Technology

1) Recommender framework
2) Mining big data and social knowledge

Recommender system

Graph of items

Comments

Description

3) Solutions for

- Natural Language Processing
- Image Processing

Natural Language Processing
- Image Processing

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Impact: on Societies

- Enhance **consumer - retailer visibility**
  
  => motivate ecommerce

- **Consumers:**
  + **Easily** choose suitable products
  + **Buy** product of retailers with best quality, service, price
  + **Save** time and money

- **Retailers:**
  + **Obtain** new customers
  + **Increase** online sales
  + **Adjust** strategies and policies from customers’ comments
Impact: on collaborations

- Researchers from many institutes and countries

1. Le Quy Don Technical University
2. Vietnam National University
   University of Engineering & Technology (VNU UET)
3. Posts and Telecommunications Institute of Technology (PTIT)
4. Phenikaa University

\[\text{not an ASEAN IVO member}\]
1) new application for product recommendation

You should buy this from retailer ABC, because:
+ Hardware …
+ Price …

2) New approaches for problems of natural language, image processing
   + Information Extraction (query)
   + Language Understanding (comments, product description)
   + Image Retrieval (query)
Outcome: Society

1. **big data of ecommerce** for research communities
   - Product descriptions
   - Retailers
   - Customers’ comments

2. **New partners**
   - Vietnam
   - Japan
   - Thailand
   - Singapore
   - Malaysia
Conclusion

1. Targets
   + Building a recommender system for ecommerce

2. Method
   + Collect data (products, retailers, comments) from ecommerce websites
   + Analyze input to understand user intention
   + Recommendation based on:
     - product information
     - user intention
     - social comments

3. Scientific and societal impact
   + new approaches for image, natural language processing
   + new application for ecommerce
   + dataset for research communities
   + collaborations among researchers from institutes and countries
Thank for your attention!

Q & A