

Computer Vision @ TIKI

TIKI Marketplace Engineering



Introduction

- Lê Minh Nghĩa: Director of Marketplace System
- Phan Quốc Tin: Senior AI Engineer / PhD in Machine Learning
- Võ Quốc Bằng: AI Engineer

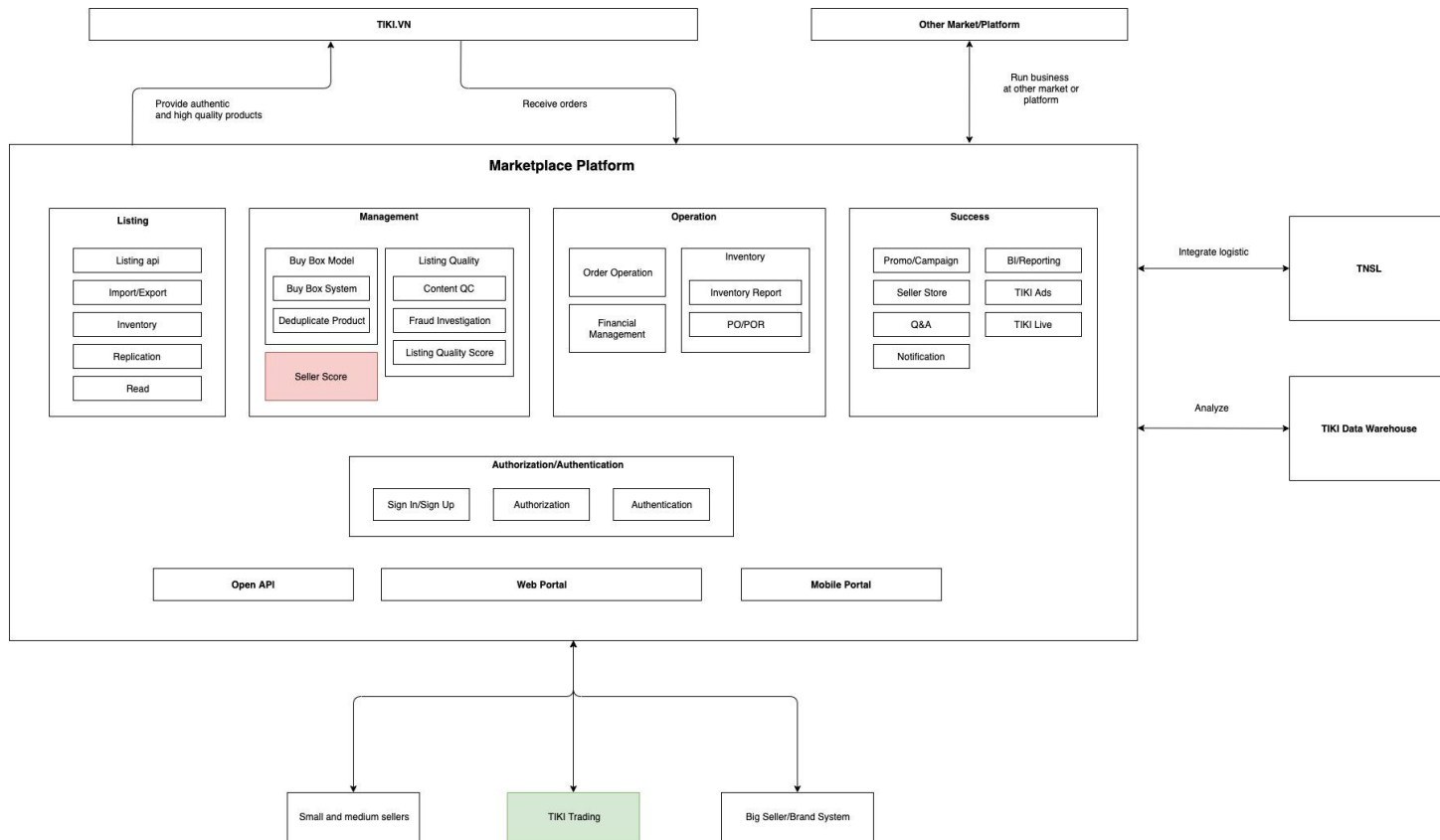


AGENDA

- Overall TIKI Marketplace Platform
- Seller Listing & Computer Vision problems
- Product matching problem
- Logo and Brand Detection problems



Marketplace Platform





Seller Listing

- 6 million products
- 29 million images
- Images is the most important attribute
- Image Quality Rules:

https://drive.google.com/drive/u/1/folders/1OzLG3fRNgrvOnBizYTklHXoCnd_pu1KD



Seller Listing & Computer Vision problems

- Brand / logo detection
- Sensitive / prohibited content detection
- Duplicate detection and merging
- Image watermark detection
- Image manipulation detection



Product matching

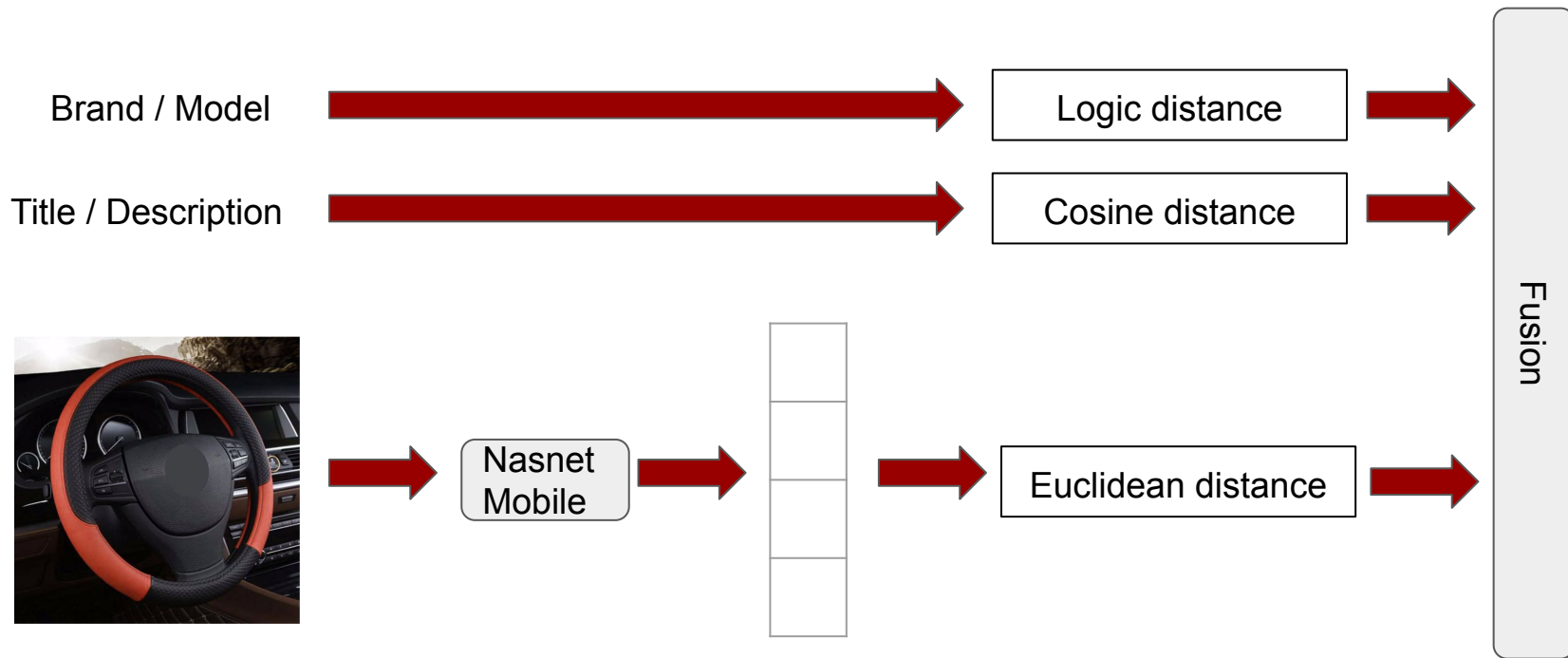
- Many sellers sell duplicated products
- It causes bad experience and lots of confusion for users when they search
- Textual matching (based on title, description) is merely not enough

PRODUCT MATCHING

- Ranks products by their similarity: textual similarity, and visual similarity
- Provides early information about matched products, suggests content QC to take quick action

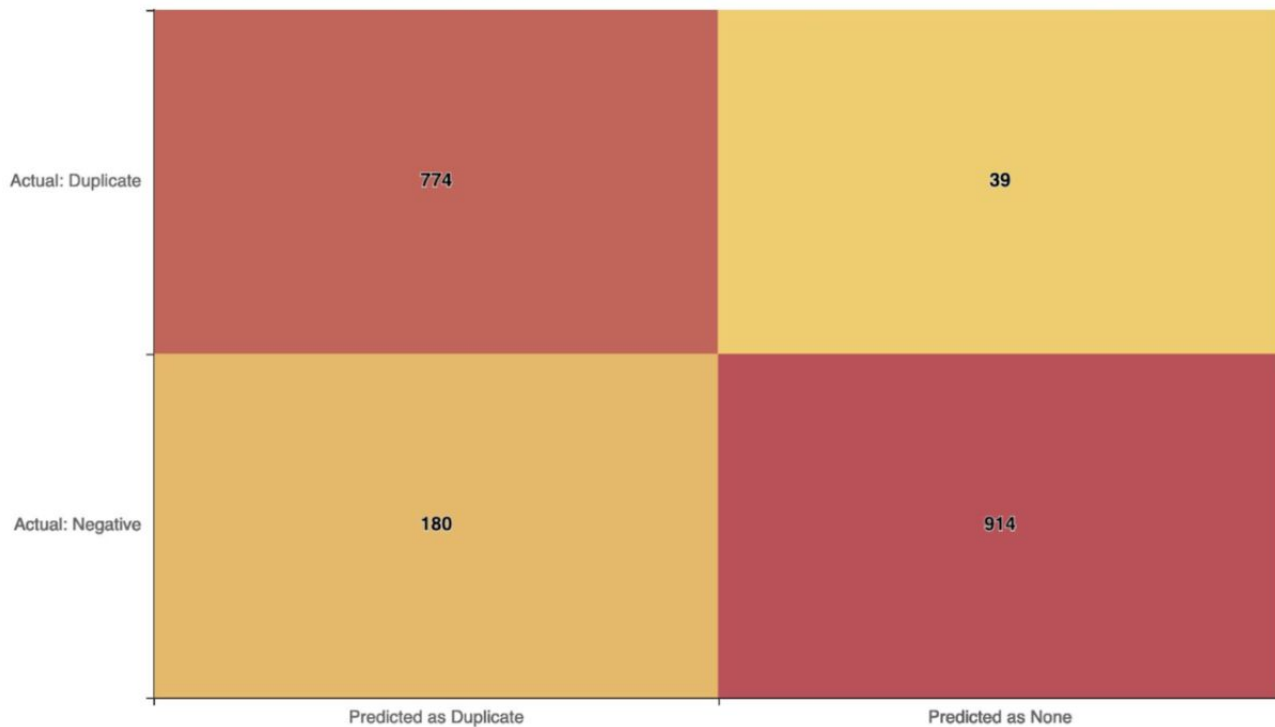


Product matching





Product matching



The accuracy of the current version is 88,51%.

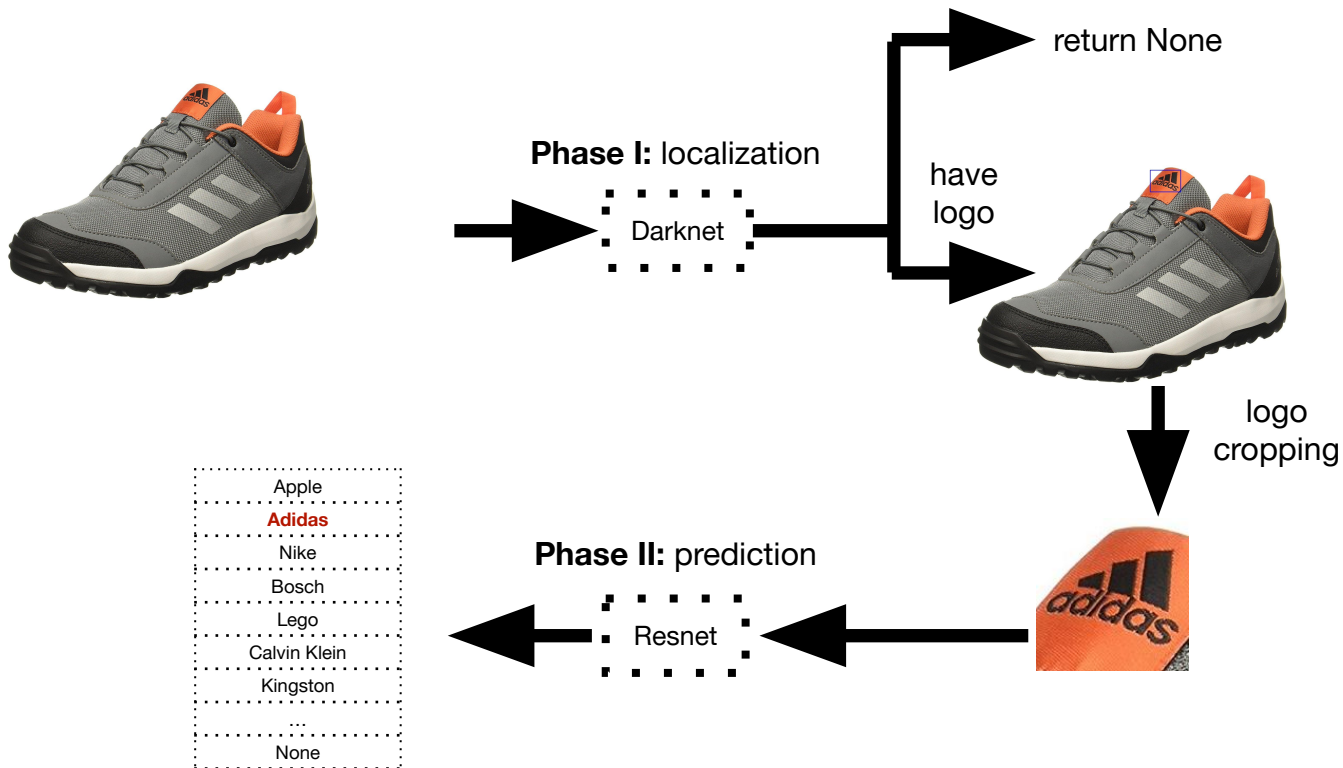


Brand/Logo Detection

- Products of famous brands must undergo legal check. Cheaters want to bypass this process
- Content manual check is bottlenecked

BRAND/LOGO DETECTION

- Automatics verification system, partially freeing content QC from manual check
- Provides early information about brand/logo mismatch





Data labeling

Image Crawler

Brand

Product
categories

Adidas

Golf

Football

Running

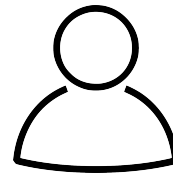
Basketball

Accessories

Labeling System



Labeler



- YOLOv3 achieves **91.73% mAP** at IOU threshold 0.5
- YOLOv3 makes **2.18%** false positive on openset scenario
- The entire system achieves: **95.68%** precision, **92.27%** recall, and **94.01%** F1 score

