InstaPromote

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Value Proposition

Digital media is the primary advertising focus for firms as social media advertising grows rapidly.Higher user engagement and relevance suggests possibility of larger ROI. With optimal influencers for an industry, companies can improve relevance and reduce advertising cost by reaching a wider target audience Our rationale for using **Instagram** was

- 1B+ MAU
- Fastest growing social network
- Visual nature implies it is extremely effective for certain industries

Project Overview

- Use Instagram to suggest optimal brand influencers for digital marketing.
- Through image recognition, sentiment analysis and topic modelling provide an in-depth analysis of any users profile.
- Elegant, customizable UI displays the results in dashboard filled with select hashtag recommendations and sentiment profiles.
- The like prediction model, incorporates varied metadata from the Instagram users profile.
- Added functionality to the model is an image detection technique that improved our accuracy. It works for images, videos and text media-types.

Data Processing

1. Modified a web-scraper with GraphQL queries, HTTP GET requests to get the images and followers/following metadata for our model.
2. Included methods to get the top comments from each post (as indicated by the number of likes) to better quantify reach and sentiment.
3. Wrote a script and pipeline to perform this task for multiple users and send that data to store repository.

Sentiment Analysis

1. Integrated emojis and slang in the comments
2. Used pre-trained Google NLP API with a sleep timer that restarts requesting data after the API is freed up for requests.
3. Modifications allows us to contextualize comments without any limitations.

Like Predictor

1. The Model takes into account features such as the day of the week, epoch (approximation to determine number of likes over time), number of previous likes
2. We use YOLO Object Detection to determine which objects are present in the images corresponding to each post to determine if specific objects improve the performance of the model

Topic Modelling

1. For every influencer we used PYLADAVIS to generate wordmap
2. Through image recognition, sentiment analysis and topic modelling we provide an in-depth analysis of any users profile leading to improved brand visibility
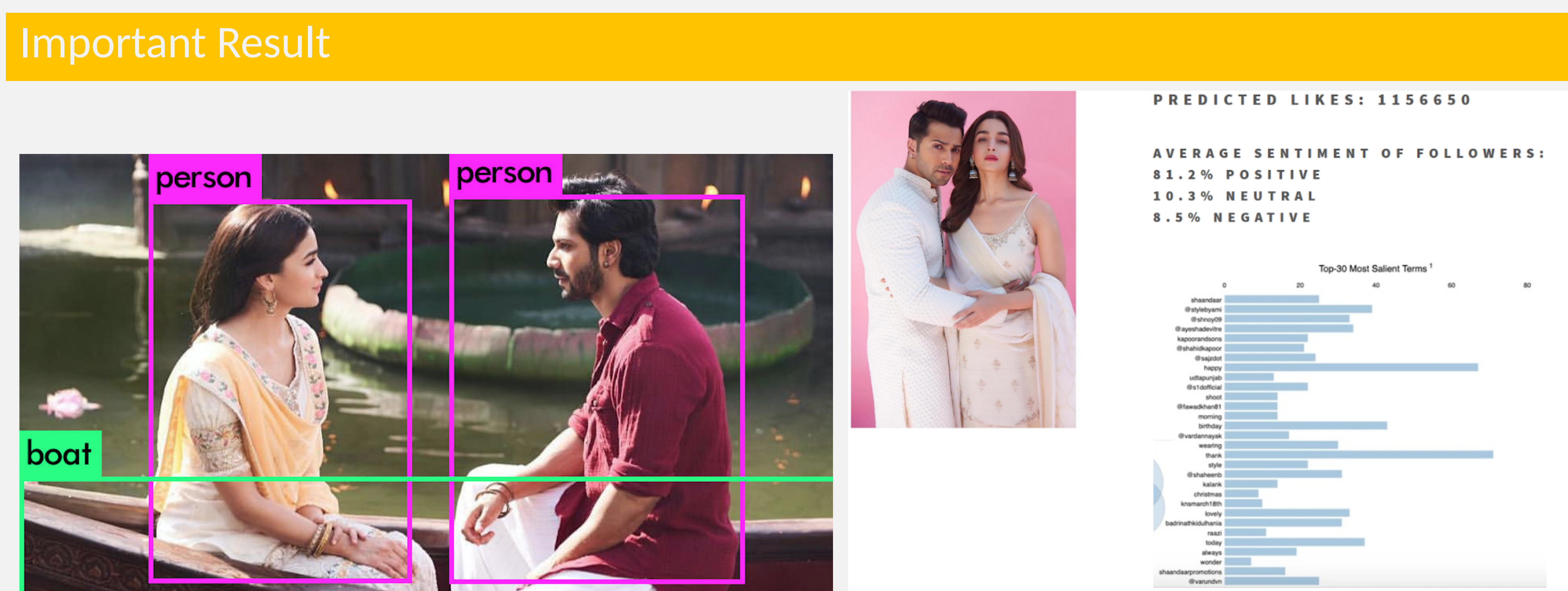
User Interface

Important Result

Figure: Image Recognition.

Figure: Final Results.
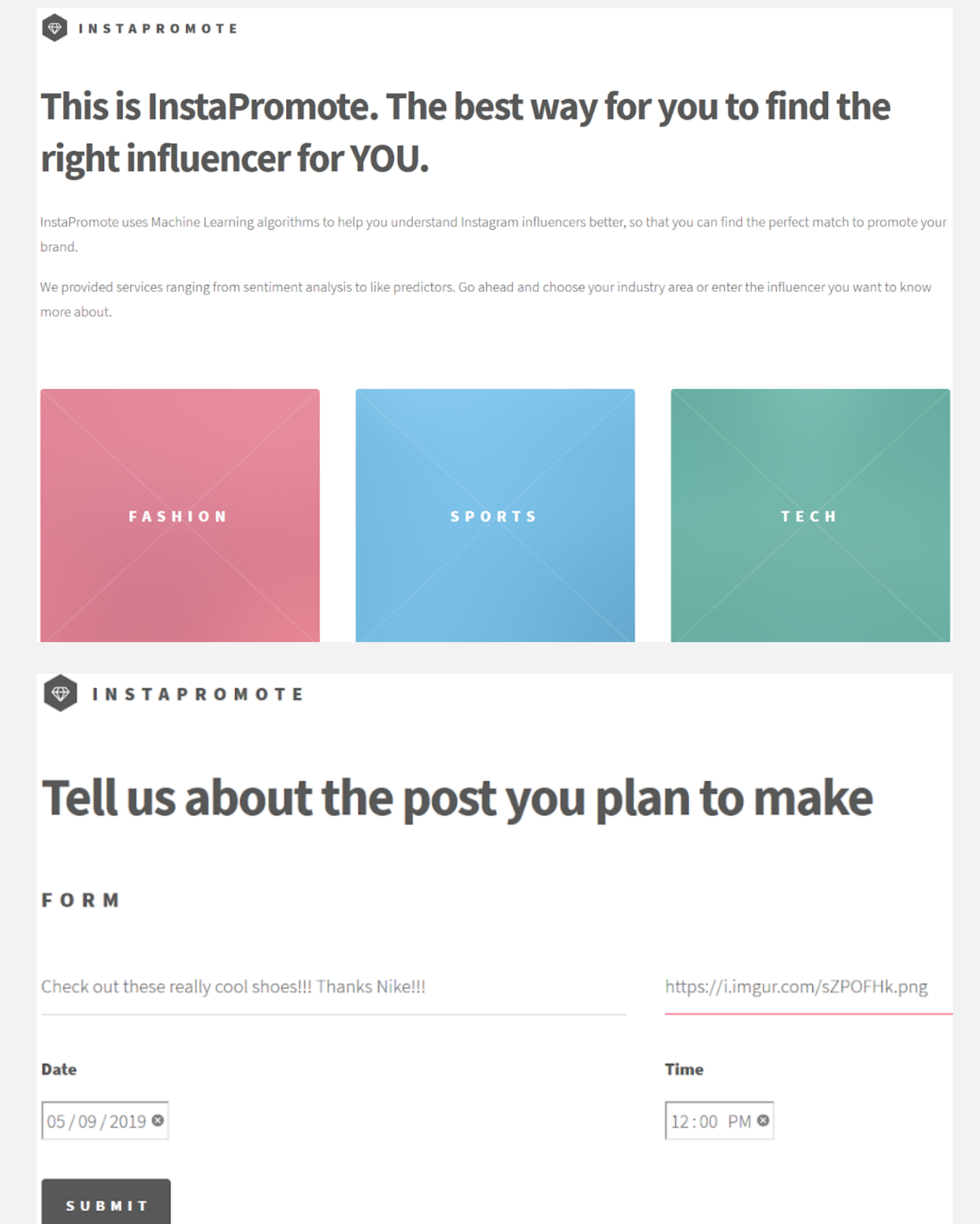
Looking Ahead

In the future, we aim to include the following into our product

- memNet: high correlation between memorability and the number of likes, would improve accuracy of like predictor
- modified YOLO: train a more nuanced object detection model to improve object detection
- Expand the influencers we consider so we can address the needs of additional industries (ex. food, technology)