A DEEP UNDERSTANDING OF USER ENGAGEMENT IN MICRO-VIDEOS

MICRO-VIDEOS: user-generated videos with maximum length of 6-15 seconds

1. Is micro-video a new form of expression?
2. How do content-related features affect user engagement (popularity)?
3. How do micro-video features change over time?

micro-video FEATURE DESCRIPTION

To understand characteristics of micro-videos, we characterize them with:

- **AESTHETIC FEATURES**
  - Contrast, Sharpness, Rule Of Thirds … [18 Features]

- **SENTIMENT FEATURES**
  - Multilingual Visual Sentiment Detectors

- **AUDIO FEATURES**
  - Related to affect: Roughness, Mode, Rhythmical … [6 Features]

- **FACE FEATURES**
  - Percentage of frames containing one or more faces

- **SOCIAL FEATURES**
  - Number of followers and previous post of the video creator

PREDICTING USER ENGAGEMENT IN MICRO-VIDEOS

A novel approach

Q: Which features affect user engagement?

- **User Engagement** = Popularity: number of loops on a micro-video
- **Classifier**: Binary popularity prediction
- **Variable Popularity Threshold** for popularity annotation binarization
- **Sensitivity Analysis** by training a series of classifiers for different thresholds

A: Content features matter for very popular videos. Faces engage us.

DATASET COLLECTION

- **POP-12K**: 12,000 popular Vines
- **UNPOP120K**: 120K Non-popular Vines from all channels.

Vine, A NEW FORM OF EXPRESSION: A Quantitative Analysis

Q: Is Vine similar to Images or to Videos?

- 3 Datasets: Vine, Flickr, Youtube
- 3 Features: Aesthetics, Objects, Sound
- Aggregation of features for each dataset
- KL Divergence to measure Distance

A: micro-videos are not image nor videos!

MICRO-VIDEOS OVER TIME

The Primacy of the First Seconds

Q: How do features change over time in 6-second videos?

- 3 Features: Sentiment, Faces, Aesthetics
- 3 Video Segments: 2-second thirds
- Compute feature values at each third
- For which third features have max value?

A: Image quality and sentiment deteriorate over time.