Bad Guy Identifier

Actor role recognition based on movie trailers

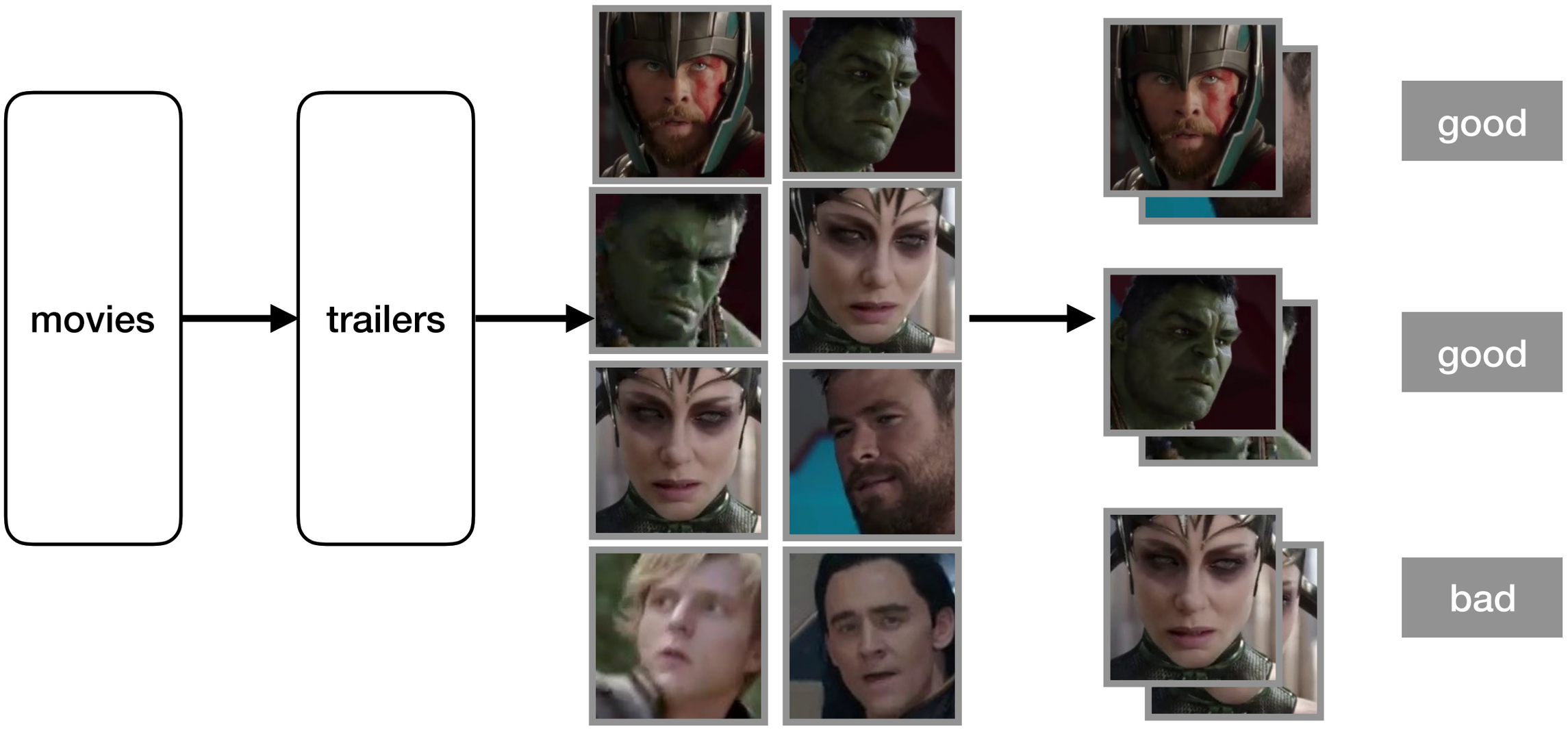
Yue Cao (yuec1)
Supervisor: Prof. Alex Hauptmann

MCDS Analytics Capstone 2018

Introduction

- Can neural networks learn “commonsense”?
- Movie (trailers) contains an easier, exaggerated version of commonsense, and these data are easy-to-get
- [Objective] *build an offline classifier that takes in a movie trailer, identify main characters and classify them into three categories: good, bad, and uncertain, with an accuracy higher than 50%.*

Dataset Generation Pipeline

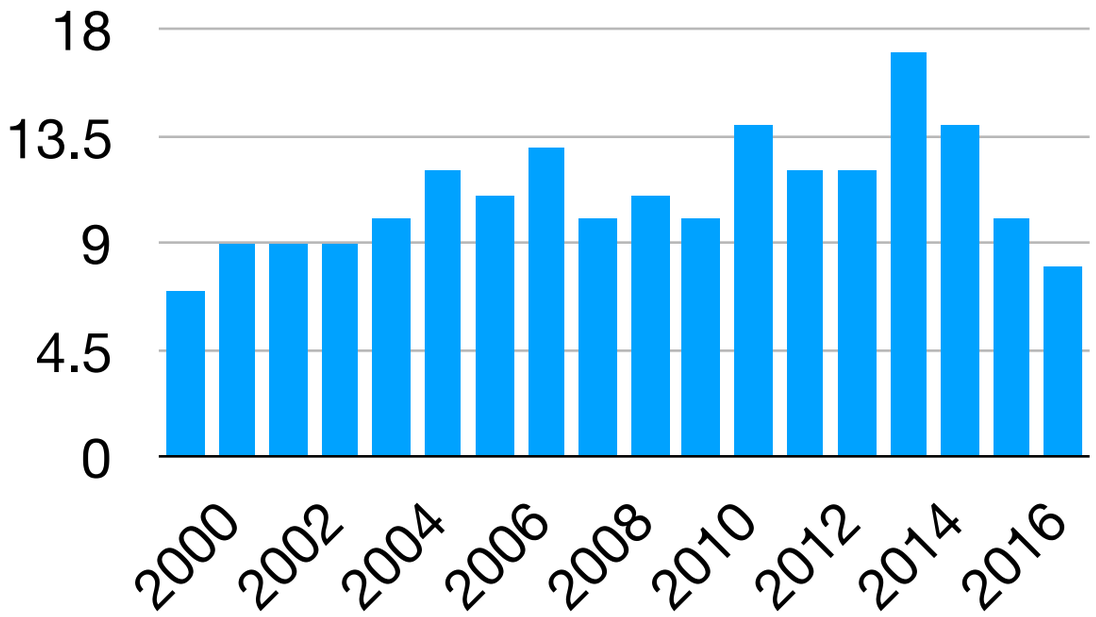


Dataset Generation Pipeline

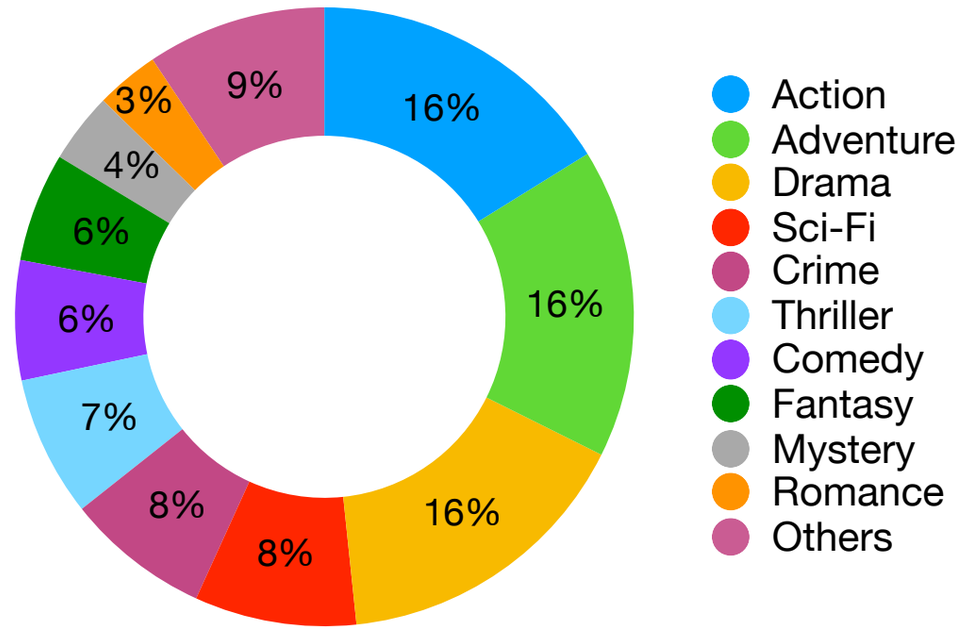
- **Movie scrapping**
  - IMDB top 25 most featured films from year 2000 - 2017
  - Filter out Anime, non-English, #rating < 250,000
  - 198 movies in dataset
- **Trailer download**
  - query “official trailer <movie_title>” in YouTube
  - use 1st result
- 2 steps combined takes < 10 minutes to complete

Dataset Generation Pipeline

#movies each year



genre distribution



- **Movie scrapping**
  - IMDB top 25 most featured films from year 2000 - 2017
  - Filter out Anime, non-English, #rating < 250,000
  - 198 movies in dataset
- **Trailer download**
  - query “official trailer <movie_title>” in YouTube
  - use 1st result
- 2 steps combined takes < 10 minutes to complete

Dataset Generation Pipeline

- Goal: 100% recall and precision for retrieving main characters in the trailer; for each main character identified, the group containing his/her faces must have ~100% accuracy and reasonably good (~90%) recall
- Package: open sourced python face_recognition
- **Face recognition**
  - sampling 1 out of 4 frames
  - most time consuming step: 10-12 minutes each trailer
- **Face grouping and main character identification**
  - start with 0 group and add groups whenever a new face does not belong to any group
  - a face belongs to a group if the majority of faces in that group agrees they are the same person

Timeline

- **Milestone 1 [Sep. 1 - Sep. 17] [Completed]**
    - Dataset preparation
    - Deliverable: a ready-to-use, clean dataset of videos
- **Milestone 2. [Sep. 17 - Oct. 15] [Almost done except manual labelling]**
    - Face recognition and character identification.
    - Deliverable: for each video, use face recognition and clustering to identify its main characters appeared. For each character, manually label it with ground truth.
- **Milestone 3. [Oct. 15 - Nov. 12] First stage training using only image features.**
- **Milestone 4. [Nov 12 - Nov. 26] Incorporate audio and/or text (script).**
- **Milestone 5. [Nov. 26 - Dec. 10] Final report and project presentation.**