

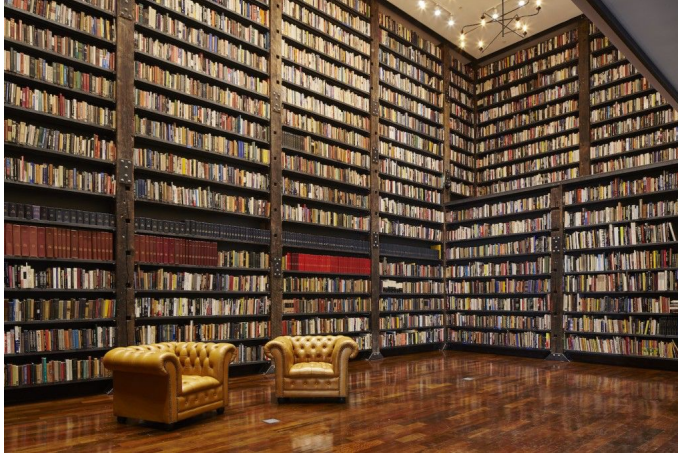
# Multi-view Story Characterization from Movie Plot Synopses and Reviews

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# Too Many Options !!!

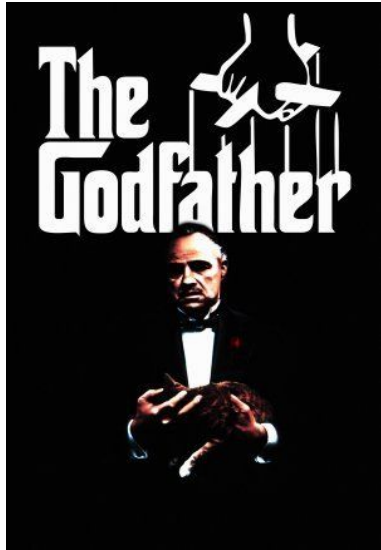


# Tags help ...

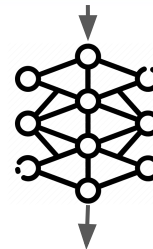


# Written Narratives to Tags

## Plot Synopsis



In late summer 1945, guests are gathered for the wedding reception of Don Vito Corleone's daughter Connie (Talia Shire) and Carlo Rizzi (Gianni Russo). ... The film ends with Clemenza and new caporegimes Rocco Lampone and Al Neri arriving and paying their respects to Michael. Clemenza kisses Michael's hand and greets him as "Don Corleone." As Kay watches, the office door is closed."



violence

action

murder

atmospheric

revenge

# Weaknesses

- Prediction quality = synopses quality
- Predefined tagset is limited



# A Stronger Model

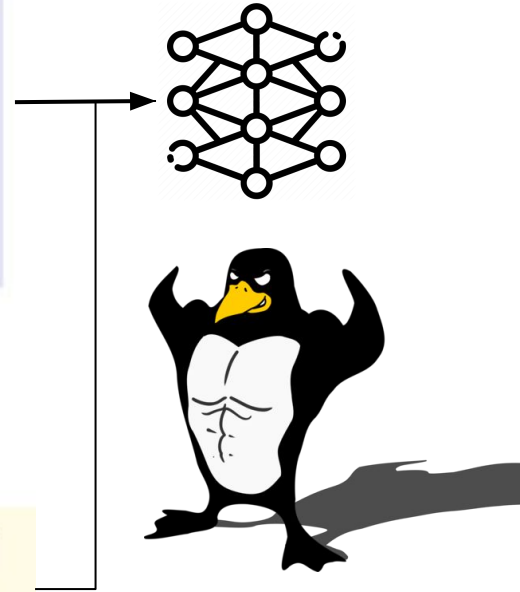
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+

## Review

Even if the viewer does not like mafia type of movies, he or she will watch the entire film ... Its about family, loyalty, greed, relationships, and real life. This is a great mix, and the artistic style make the film memorable.





# Complementary Tags

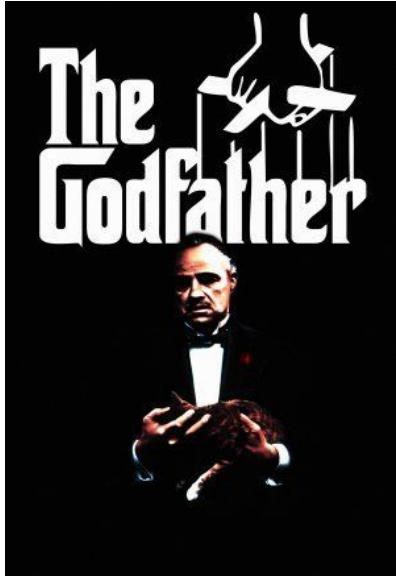
## Review

Even if the viewer does not like **mafia** type of movies, he or she will watch the entire film ... .. Its about **family, loyalty, greed, relationships,** and real life. This is a great mix, and the **artistic** style make the film memorable.

**mafia** **family** **loyalty**  
**greed** **relationship** **artistic**

# Our Goal

## Plot Synopsis



In late summer 1945, guests are gathered for the wedding reception of Don Vito Corleone's daughter Connie (Talia Shire) and Carlo Rizzi (Gianni Russo). ... The film ends with Clemenza and new caporegimes Rocco Lampone and Al Neri arriving and paying their respects to Michael. Clemenza kisses Michael's hand and greets him as "Don Corleone." As Kay watches, the office door is closed."

## Review

Even if the viewer does not like mafia type of movies, he or she will watch the entire film ... Its about family, loyalty, greed, relationships, and real life. This is a great mix, and the artistic style make the film memorable.

violence action murder atmospheric revenge

mafia family loyalty greed relationship artistic



# Contributions

- ~1.9M movie reviews
- Better tag prediction model by exploiting reviews in addition to synopses (if available)
- Open-vocabulary tag extraction from reviews without direct supervision
- User studies

# Dataset

	Train	Val	Test
Instances	9,746	2,437	3,046
Tags per instance	3	3	3
Reviews per movie	72	74	72
<sup>S</sup> Sentence per document	50	53	51
<sup>S</sup> Words per sentence	21	21	21
<sup>R</sup> Sentence per document	117	116	116
<sup>R</sup> Words per sentence	27	27	27

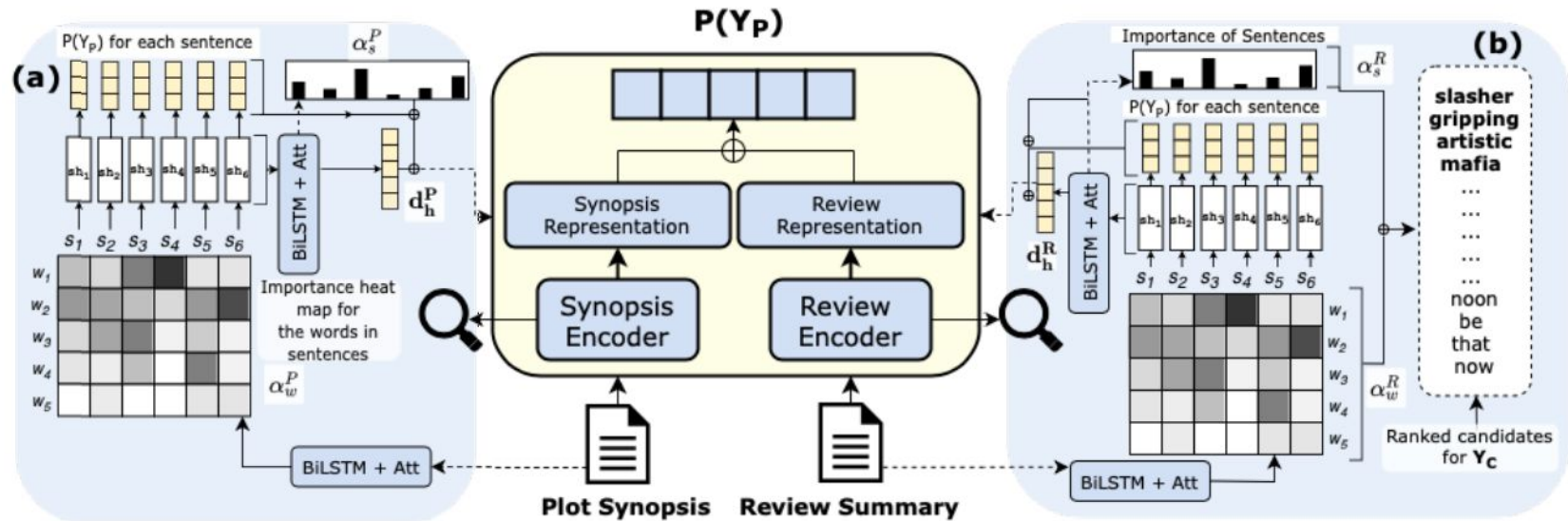
Table 1: Statistics of the dataset. <sup>S</sup> denotes synopses and <sup>R</sup> denotes review summaries.

<https://ritual.uh.edu/mpst-2018>

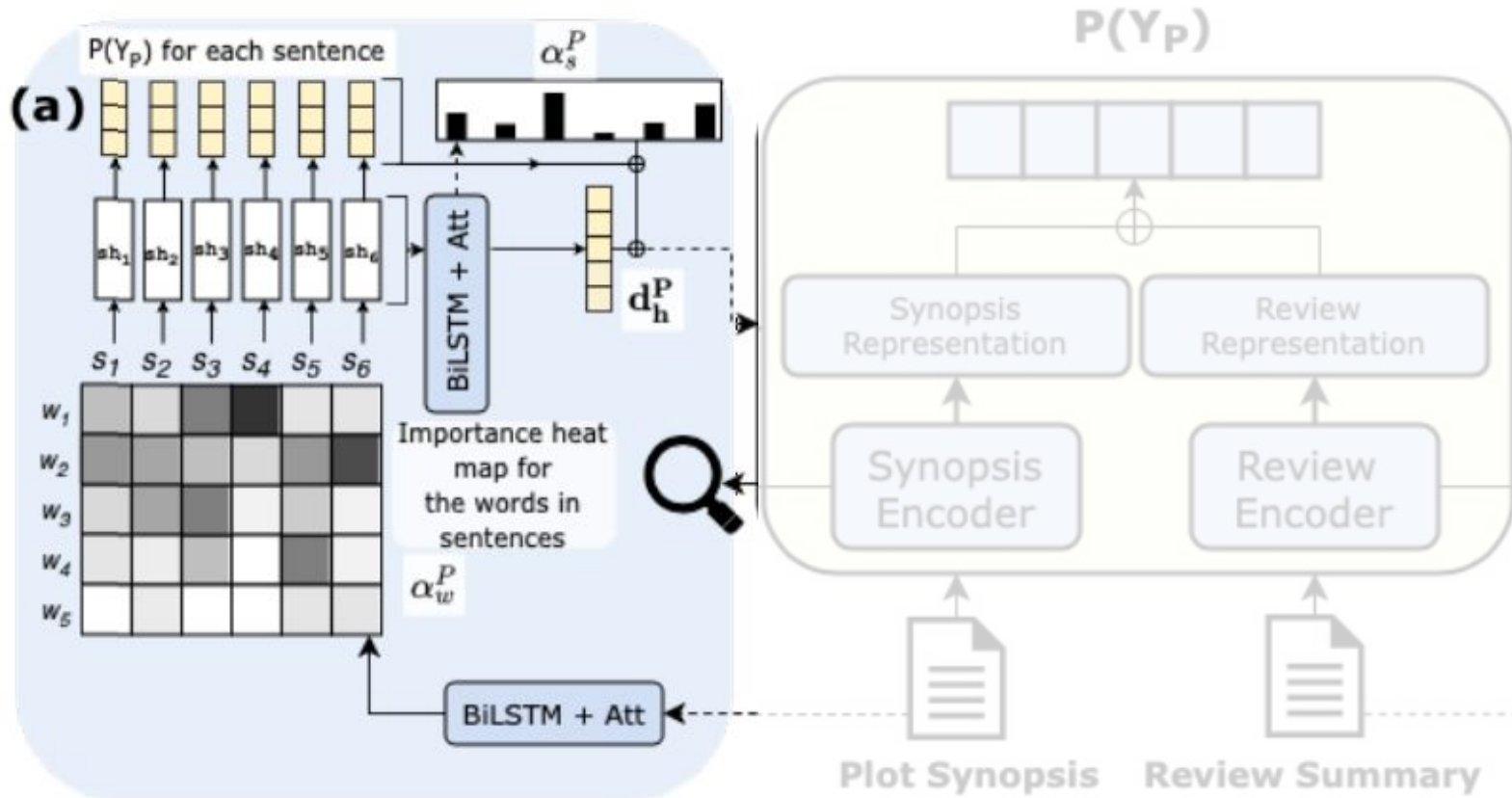
# Modeling Motivation

- Capture dependencies in both short and long contexts
  - Synopses and reviews are long texts
- Identify and control the contribution from synopses and reviews
- Spot tags in reviews without direct supervision

# Model Overview

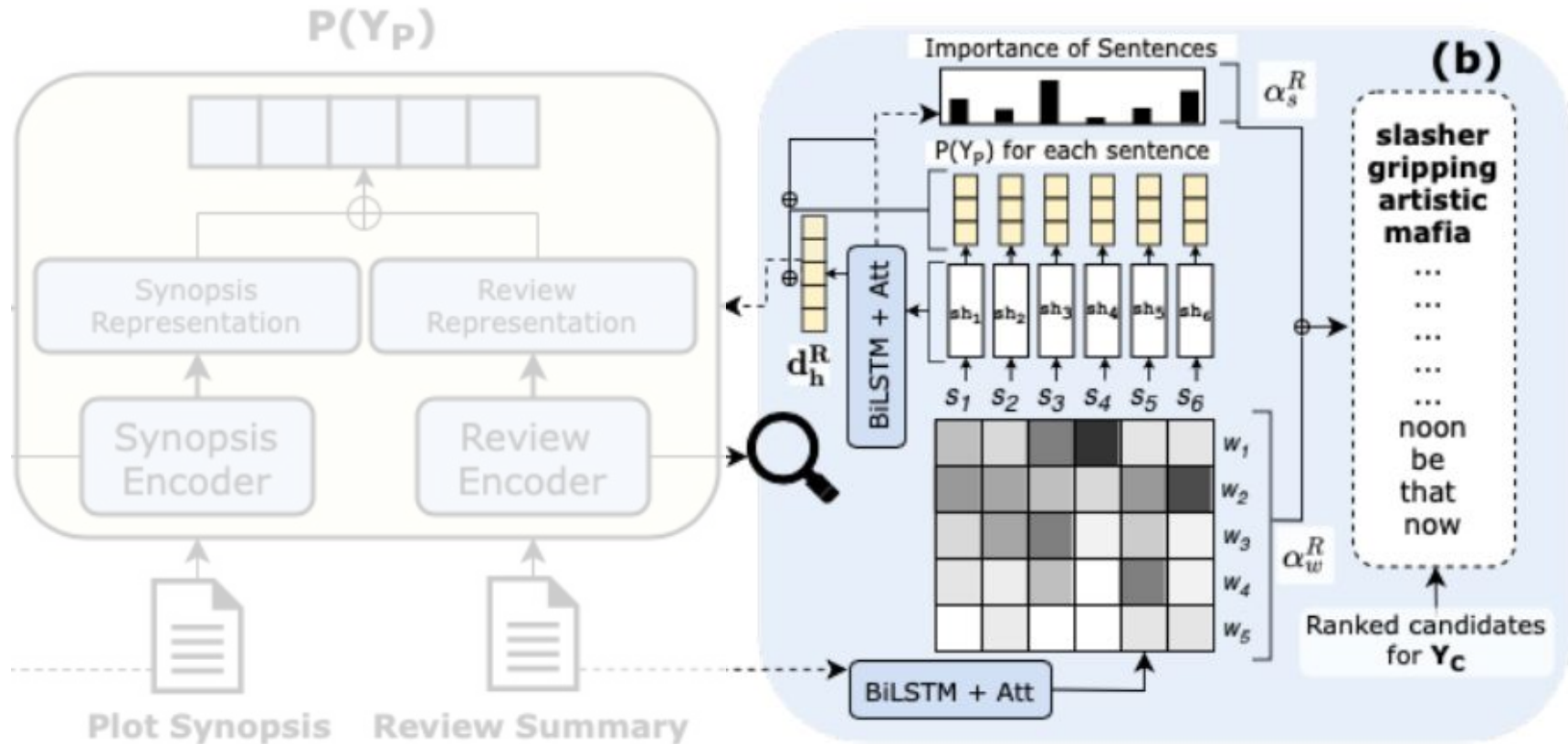


# Encoding Synopses

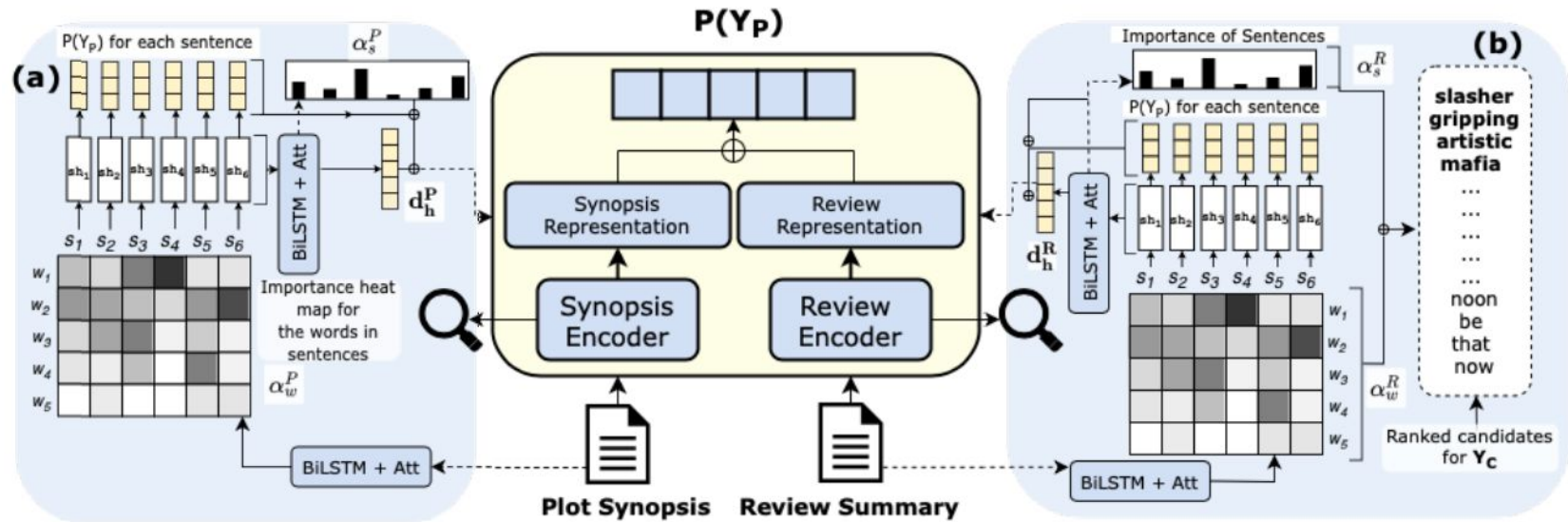




# Encoding Reviews



# Model Overview



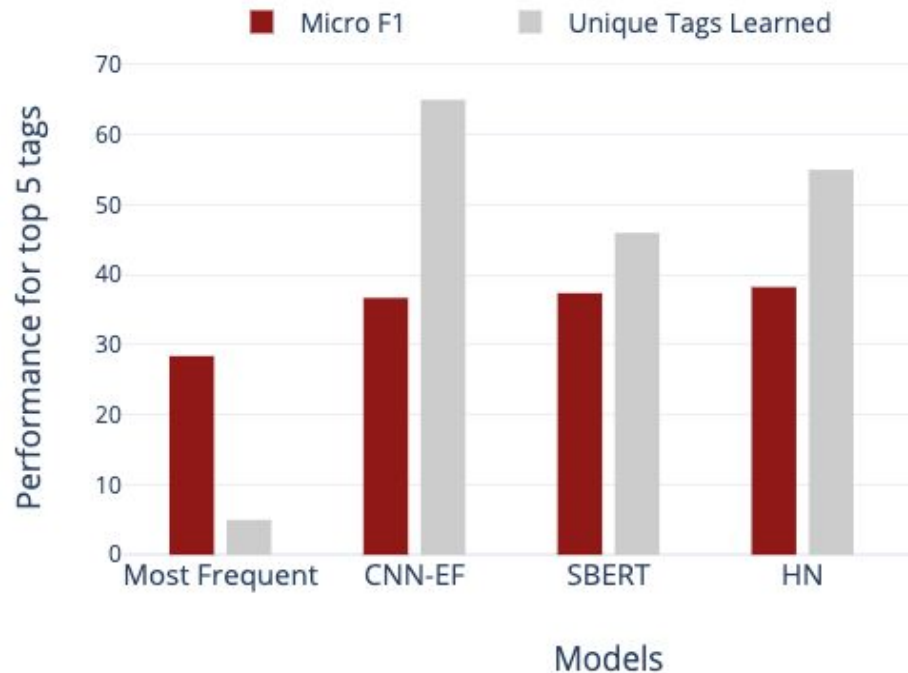
# Research Questions

**Q1:** Can our model do better than other models for predicting tags from only synopses?

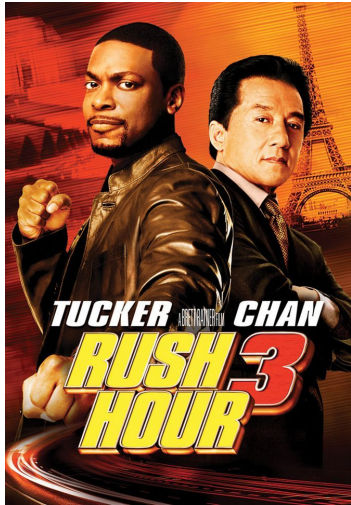
**Q2:** When available, can reviews strengthen the *synopses to tag prediction* model?

# Research Question 1

Can our model do better than other models for predicting tags from only synopses?



# How the Model is Working?



mystery

\_30\_ Lee and Carter learn that Geneviève not only knows where the list is , she is the list .

action

\_37\_ During a sword fight , Lee and Kenji fall off the tower and get caught in a safety net .

intrigue

\_38\_ Kenji 's sword cuts the safety net open and it collapses , leaving both men hanging on for dear life .

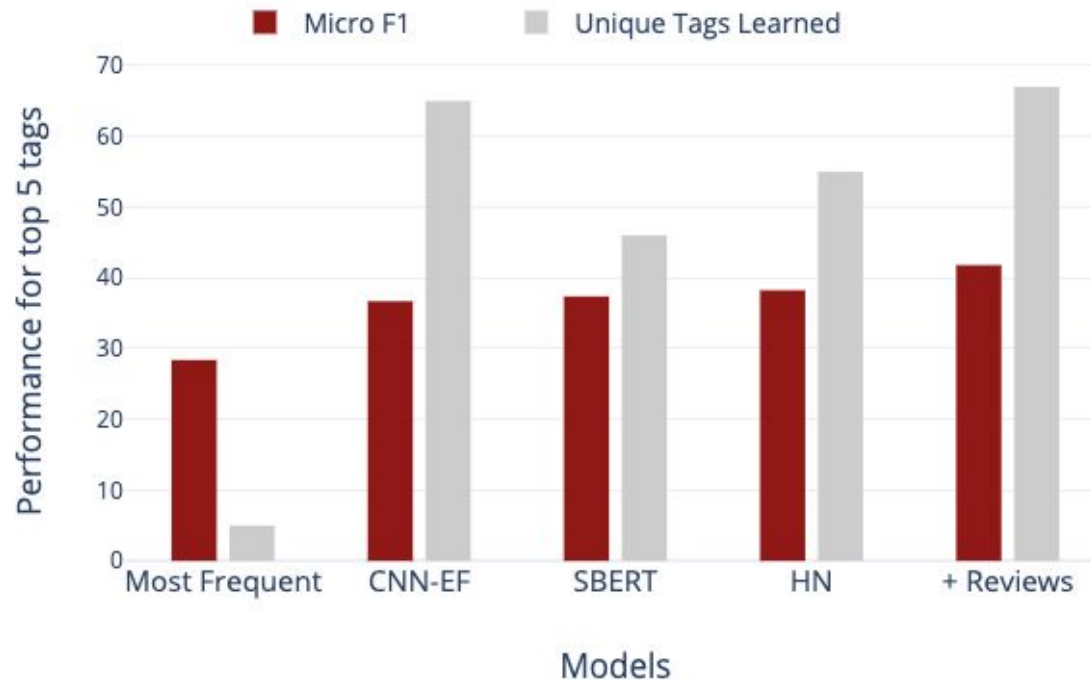
dramatic

\_41\_ Meanwhile , Carter single handedly defeats the rest of the Triad henchmen , unwittingly kills Jasmine , and saves Soo Yung .



# Research Question 2

When available, can reviews strengthen the synopses to tag prediction model?

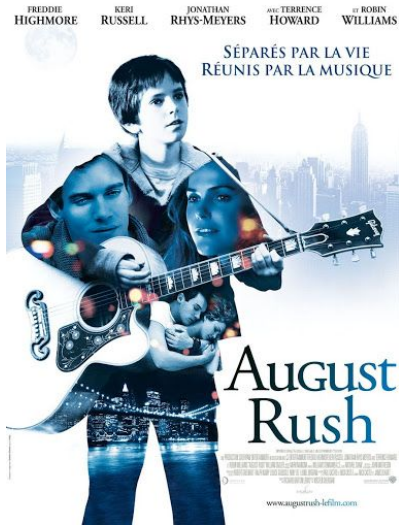


# Tag Extraction from Reviews

- We do not have annotated training data for this
- Neural models are data hungry
- Annotation is time consuming and expensive

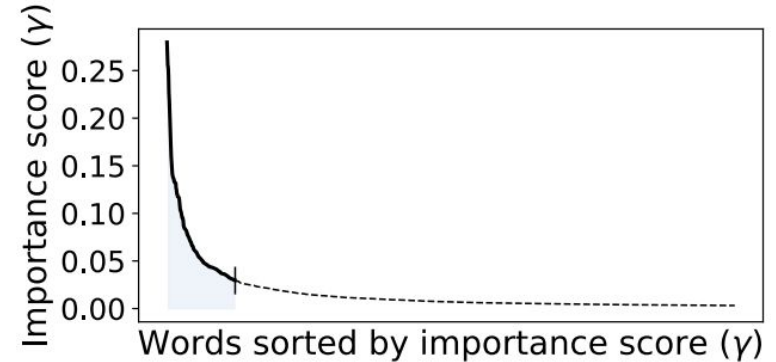
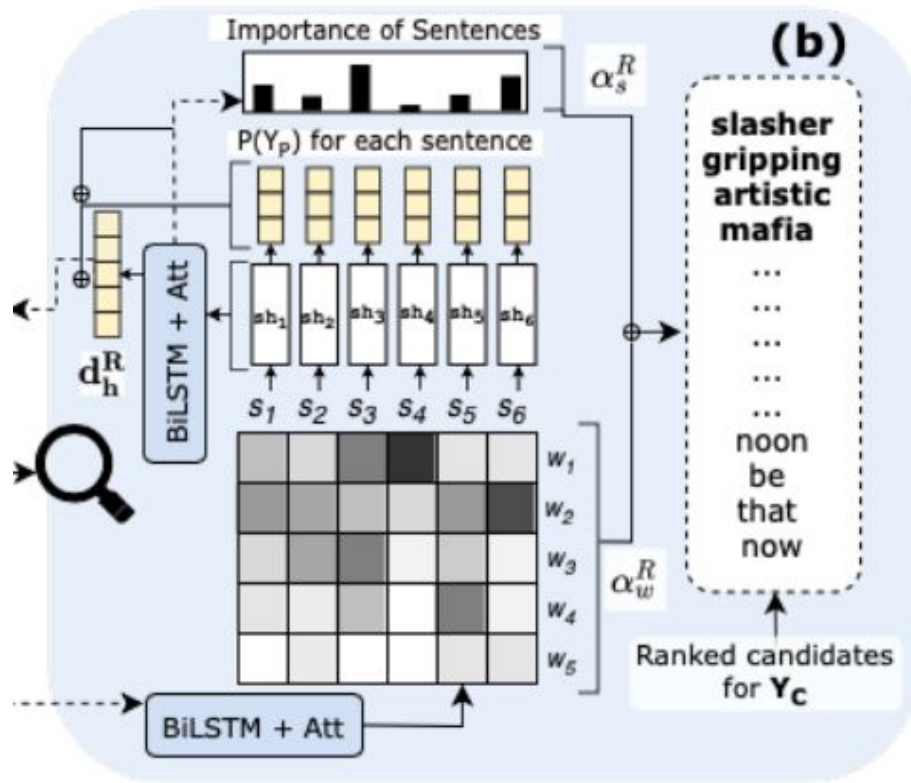
Can we take advantage of our model?

# Inside the Review Encoder



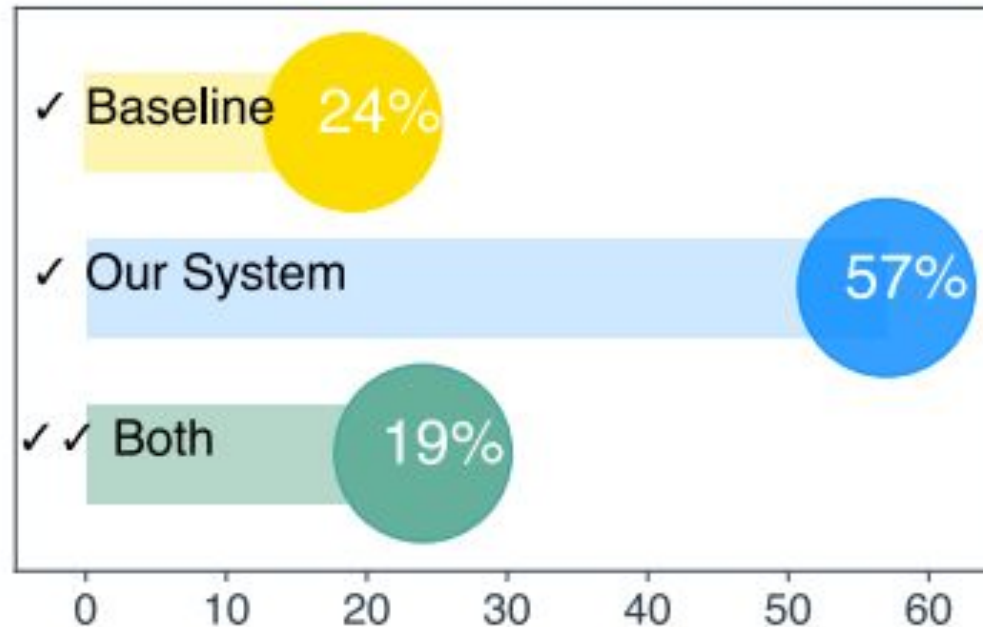
- 5 The scenes have an appealing **fantasy** element , while at the same time , the plot manages to explore true - to - life human situations such as **bullying** of those who are different .
- 6 The music is **incredible** , and mostly consists of original scores .
- 7 It includes **gospel** , **rock** and **classical** , seamlessly integrated in a new way that works extremely well .
- 8 The plot is somewhat predictable and possibly a little "**sappy**" , but those elements are easily overcome by the moment - to - moment execution of the story .

# Extracting Tags from Reviews



# Human Evaluation Results

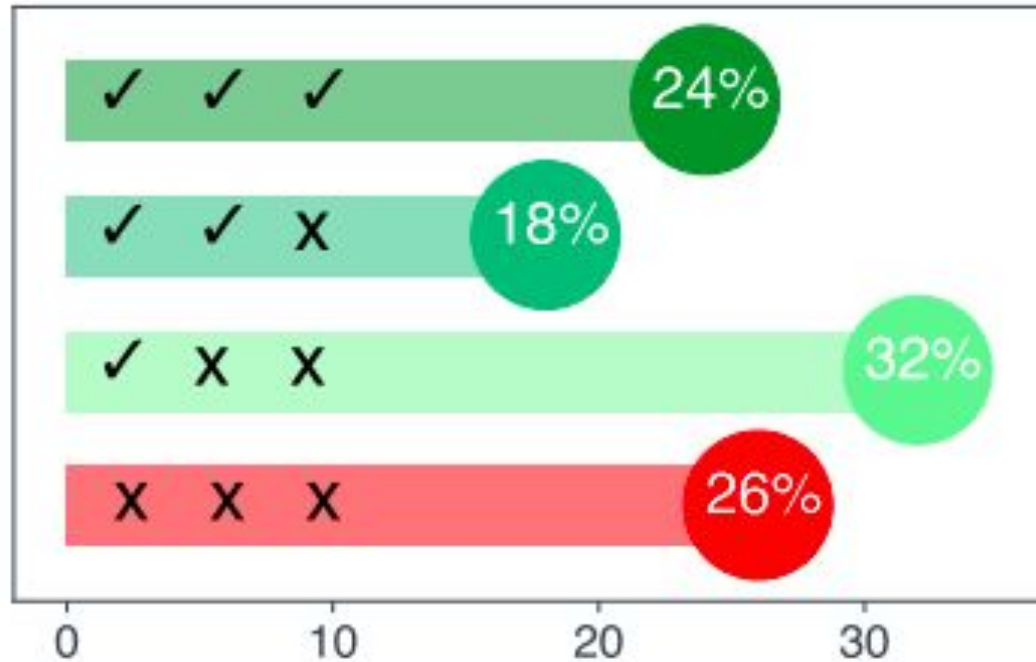
(a) Predicted predefined tags ( $Y_P$ )  
are correct for % of movies





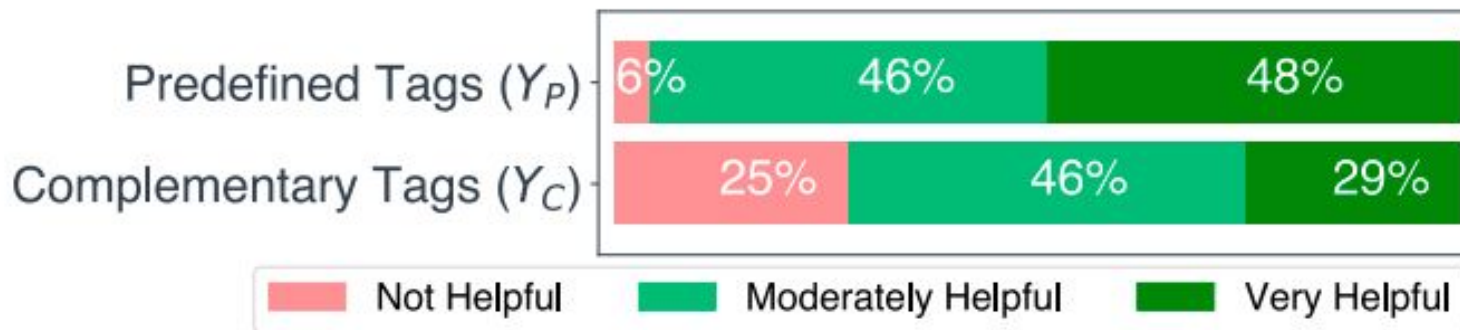
# Human Evaluation Results

(b) Relevance of the complementary tags ( $Y_C$ )



# Human Evaluation Results

(c) Helpfulness in selecting movies



# In Summary

- Reviews make a *Synopses to Tag* model stronger
- Extract tags from reviews without supervision
- In the Future: unsupervised approach for tag extraction from reviews

# THANK YOU



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## Data and Source Code

[ritual.uh.edu/multiview-tag-2020](http://ritual.uh.edu/multiview-tag-2020)

## Contact

[skar3 at uh dot edu](mailto:skar3@uh.edu)

### Multi-view Story Characterization from Movie Plot Synopses and Reviews

#### Contributors

- Sudipta Kar
- Gustavo Aguilar
- Mirella Lapata
- Thamar Solorio

#### Abstract

This paper considers the problem of characterizing stories by inferring properties like theme and style using written synopses and reviews of movies. We experiment with a multi-label dataset of movie synopses and a tagset representing various attributes of stories (e.g., genre, events). Our proposed multi-view model encodes the synopses and reviews using hierarchical attention and shows improvement over methods that only use synopses. Finally, we demonstrate how we can take advantage of such a model to extract a complementary set of story-attributes from reviews without any direct supervision.

#### Links:

[Paper](#) | [Source Code](#) | [Dataset](#)

For any query, please contact the first author: [skar3 AT uh DOT edu](mailto:skar3@uh.edu).

# Dataset

- Starting dataset: MPST Corpus
  - 71 predefined tags' multi-label assignment to ~15k movies
  - Plot synopses of movies
- Collected ~1.9M reviews from IMDb
  - Popular movies have more reviews, some have none
  - Summarized 100 most relevant reviews



# Human Evaluation

- Which model is better for assigning predefined tags?
  - Our model
  - Baseline: CNN-EF
- How relevant are the complementary tags to the movies?
- Are these tags helpful in movie selection?
  - Predefined tags
  - Complementary tags extracted from reviews

# Generalization Capability

## New movies

**The Irishman:** murder, neo noir, revenge, violence, flashback

**Avengers Endgame:** good versus evil, fantasy, action, violence, flashback

**Long Shot:** entertaining, comedy, satire, humor, romantic

**Annabelle Comes Home:** paranormal, horror, gothic, cult, good versus evil

**Once Upon a Time in Hollywood:** comedy, violence, cult, humor, murder

\* Underlined tags are found in IMDb

# Generalization Capability

## Children Stories

**Cinderella:** fantasy, cute, romantic, whimsical, psychedelic

**Snow White and the Seven Dwarfs:** fantasy, psychedelic, romantic, good versus evil, whimsical

## Modern Ghost Stories

**A Ghost:** haunting, flashback, atmospheric, murder, paranormal

**What Was It:** paranormal, haunting, gothic, horror, atmospheric

## Novels

**Romeo and Juliet:** revenge, murder, romantic, flashback, tragedy

**The Hound of the Baskervilles:** murder, mystery, gothic, paranormal, flashback

## TV Series

**Game of Thrones S6E9:** violence, revenge, murder, action, cult

**Narcos Season 1:** murder, neo noir, violence, action, suspenseful