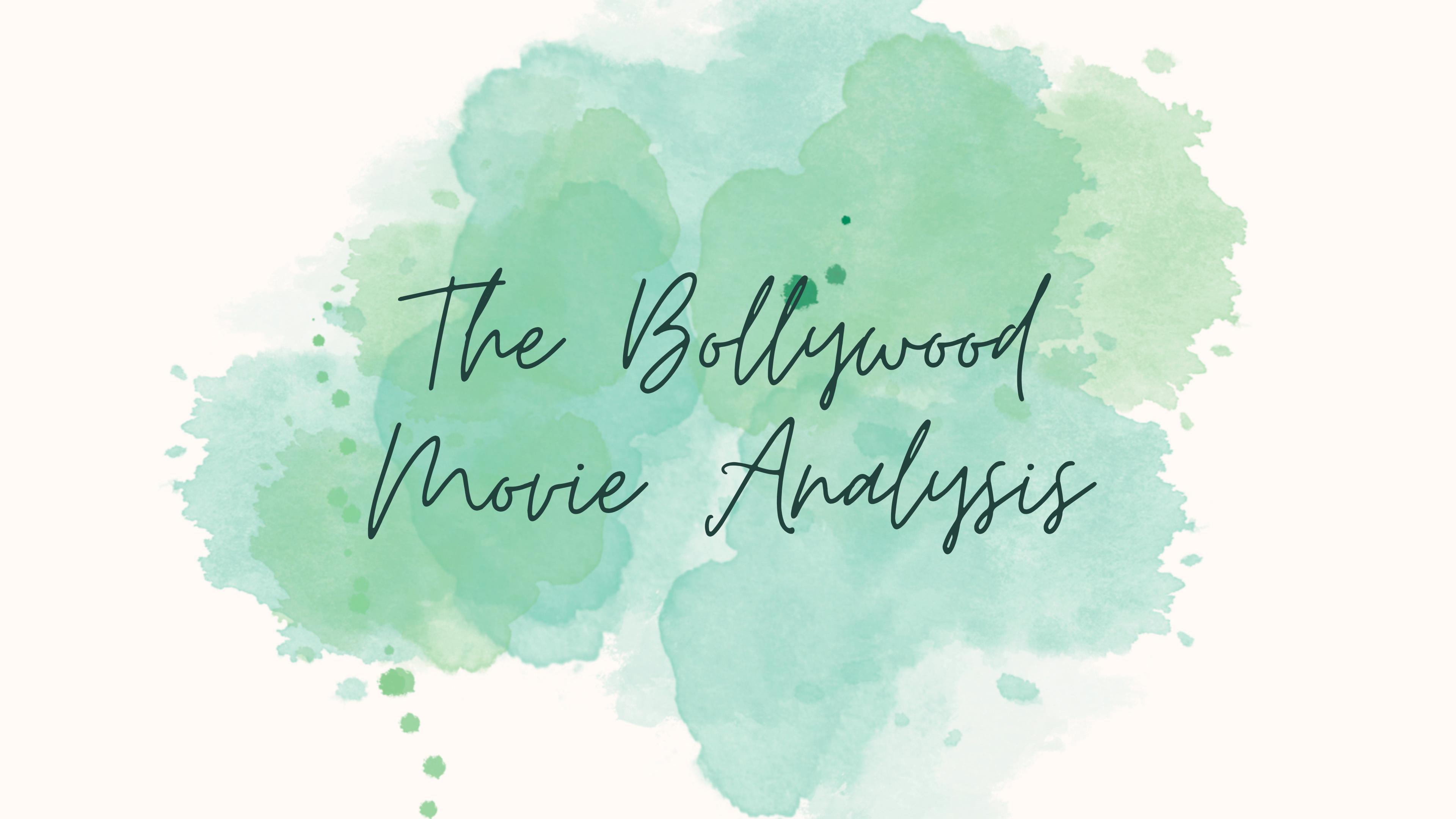




Project Proposal

- Diksha Sinha -



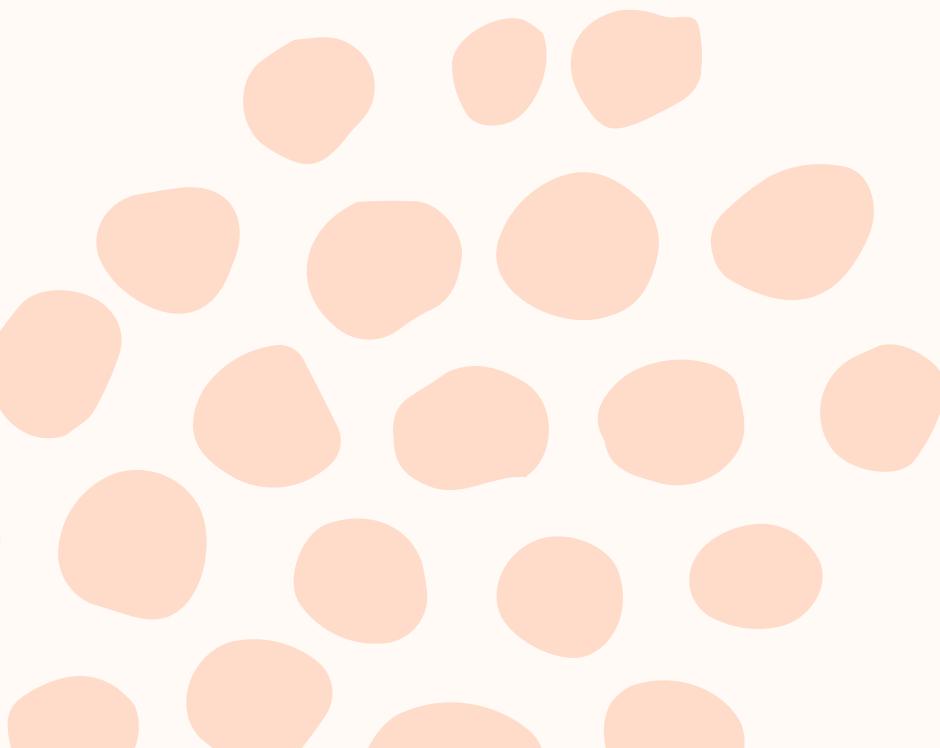
The Bollywood Movie Analysis

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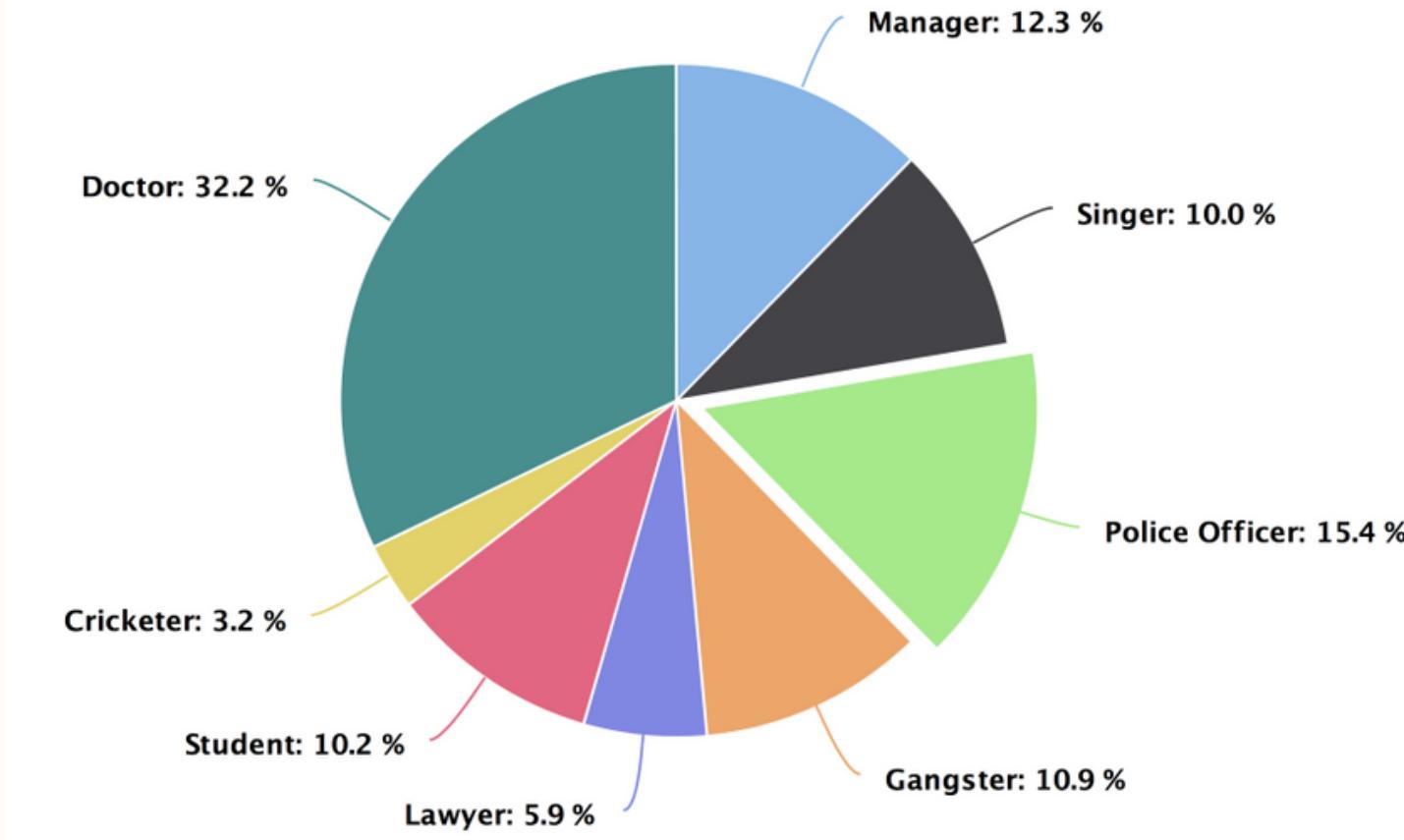


Introduction

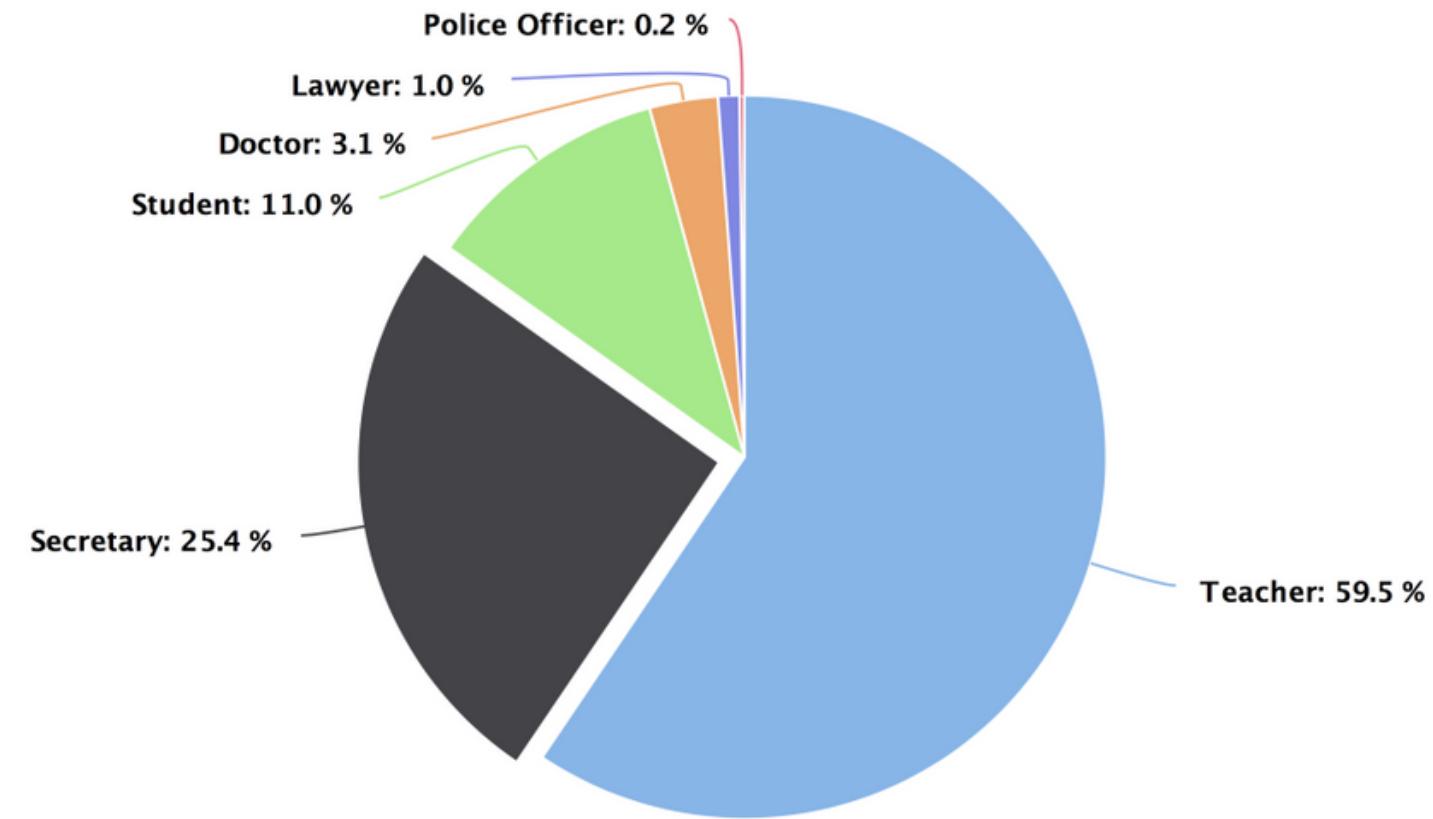


Introduction

- Movies can serve as a reflection of our society, creatively depicting its issues, thoughts, and perceptions.
- They can also be an avenue for portraying gender bias and stereotypes prevalent in our culture.
- This research paper uses Natural Language Processing (NLP) and image understanding techniques to quantify and analyze gender-based stereotypes in Hindi movies.
- A specific plot excerpt from the Bollywood movie "Kaho Na Pyaar Hai" is used to illustrate the significance of the issue.



OCCUPATION RELATED TO MALE

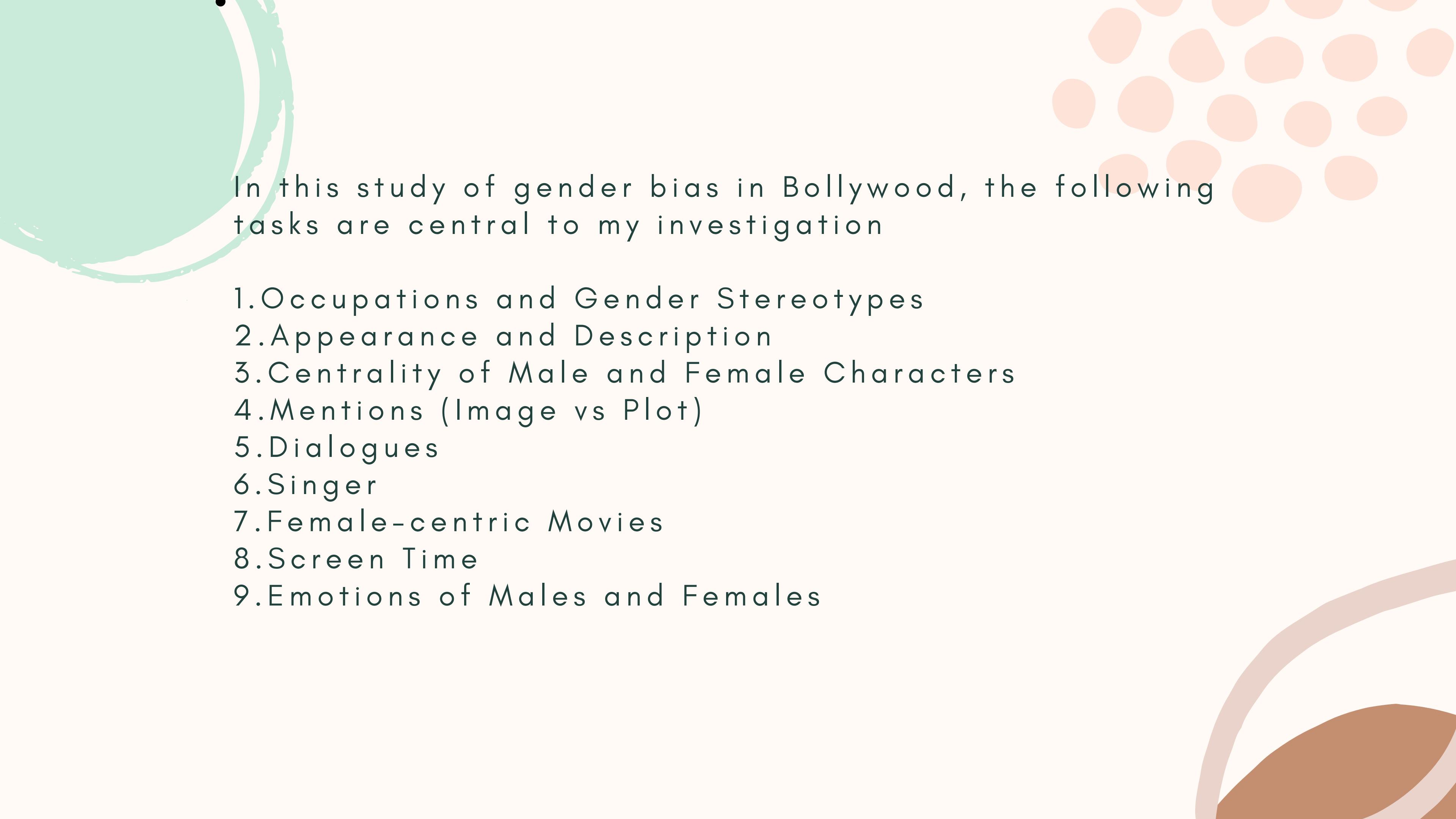


OCCUPATION RELATED TO FEMALE



Analysis Tasks





In this study of gender bias in Bollywood, the following tasks are central to my investigation

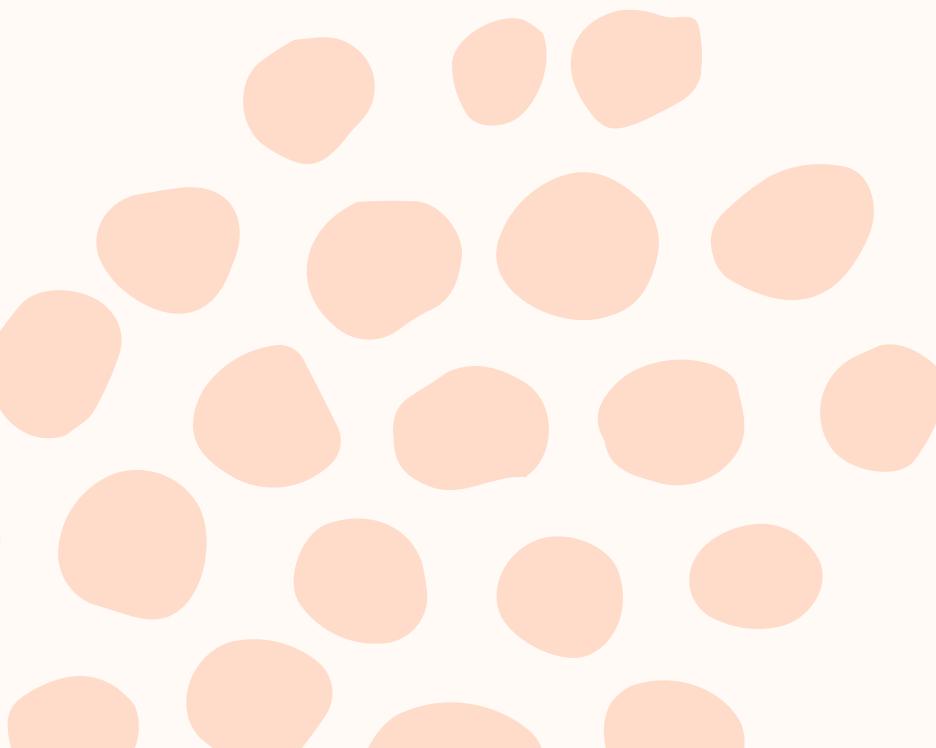
1. Occupations and Gender Stereotypes
2. Appearance and Description
3. Centrality of Male and Female Characters
4. Mentions (Image vs Plot)
5. Dialogues
6. Singer
7. Female-centric Movies
8. Screen Time
9. Emotions of Males and Females

Data Selection



- The movies data includes information about the cast of each movie, such as the number of male and female characters, their roles, and their occupations.
- The movie scripts data includes more detailed information about the characters and their interactions, such as their dialogue, relationships, and themes.
- The movie preview data provides a visual representation of gender in Bollywood movies, such as the representation of male and female characters, the way that they are portrayed, and the use of gender stereotypes.

Task and Approach



1.

Intra-sentence Level Analysis:

- Task: Examine gender representation and stereotypes within individual sentences in movie scripts.
- Approach: Analyze each sentence independently without considering its context.

2.

Inter-sentence Level Analysis:

- Task: Extend examination to multiple sentences for a broader understanding of gender portrayal in movie narratives.
- Approach: Take context from one sentence to inform the analysis of others and uncover patterns in gender depiction.

3.

Image and Plot Mentions Analysis:

- Task: Explore correlation between genders in movie posters and their mentions in the plot.
- Approach: Analyze promotional materials and narrative content to investigate visual and contextual gender representation.

4. Video Level Analysis:

Task: Perform gender and emotion detection on movie trailer frames to understand visual and emotional representation.

Approach: Apply Octavio Arriaga's method (2017) for gender and emotion detection to gain insights into movie previews.

Intra sentence Level Analysis Tasks

1. Cast Mentions:

- Extract male and female cast member mentions with co-reference resolution.
- Reveal frequency of character references in the plot.
- Highlight enduring gender bias from 1970 to 2017.

2. Cast Appearance:

- Analyze verbs and adjectives for male and female characters using Stanford Dependency Parser.
- Identify distinct portrayal patterns.
- Observe role-based language differences.

3. Cast Introductions:

- Use OpenIE for character introductions.
- Analyze gender-based differences in character presentations.

4. Occupation as a Stereotype:

- Analyze occupation distribution for male and female characters.
- Uncover occupational stereotypes in movies.

5. Singers and Gender Distribution:

- Examine gender-wise singer distribution in soundtracks (2010-2017).
- Highlight gender representation gap.

6. Cast Dialogues:

- Analyze dialogue distribution between male and female characters in 13 scripts.
- Identify movies with balanced representation and gender bias.

Inter sentence Level Analysis Tasks

1. Centrality of Cast Node:

- Measure centrality of cast members to assess focus in the plot.
- Calculate between-ness centrality for each cast node.
- Analyze trends in male and female centrality across movies.
- Identify potential gaps in centrality between genders.

2. Bias Study Using Word Embeddings:

- Perform joint modeling of verbs, adjectives, and relations.
- Generate word vectors using Google word2vec on Bollywood Movie data.
- Construct knowledge graphs for male and female cast members.
- Analyze context differences between genders.
- Use K-Nearest Neighbor algorithm for bias analysis.

Movie Preview Analysis

1. Analysis Tasks:

- Screen-On Time: Measure presence and screen time of male and female characters in frames.
- Portrayal through Emotions: Detect emotions displayed by characters in movie trailers.

2. Purpose:

- Understand portrayal of male and female characters in trailers.
- Identify potential biases in screen time and emotions.

3. Importance:

- Insights into gender representation in promotional material.
- Aim for more inclusive movie trailers.

Conclusion

Through this project, I have uncovered the pervasive gender stereotypes and biases present in Bollywood movies. The findings underscore the need for conscious efforts in the industry to promote gender equality and fair representation of both male and female characters in movie narratives. By understanding and addressing these biases, we can work towards creating more inclusive and diverse storytelling in Bollywood and the wider film industry.



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Thank
you