

A Network Tour of Data Science

Feminism in Hollywood

Group 31

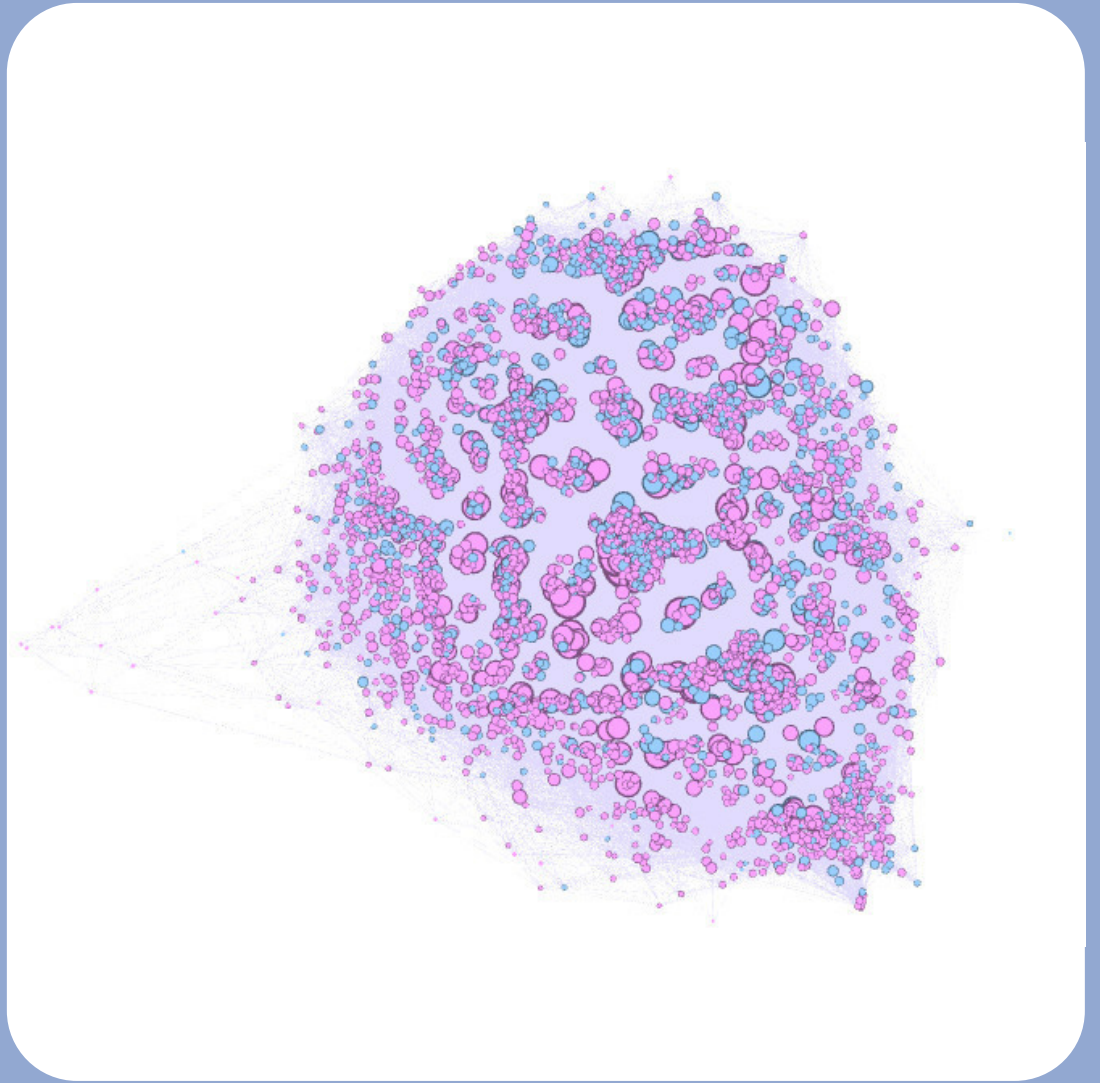
Sinan Bursa, Dilara Günay, Sinan Gökçe and Othman Benchebkroun

The image shows the iconic Hollywood sign, which consists of large white letters spelling out 'HOLLYWOOD' on a hillside. The letters are mounted on a metal framework. The hillside is covered with green vegetation and some bare patches of earth. In the background, there are more hills and a clear blue sky. The sign is a well-known landmark in Los Angeles, California.

HOLLYWOOD

Outline

- 1) Introduction
- 2) Model Selection
- 3) Network Analysis
- 4) Results
- 5) Modularity
- 6) Conclusion



Introduction

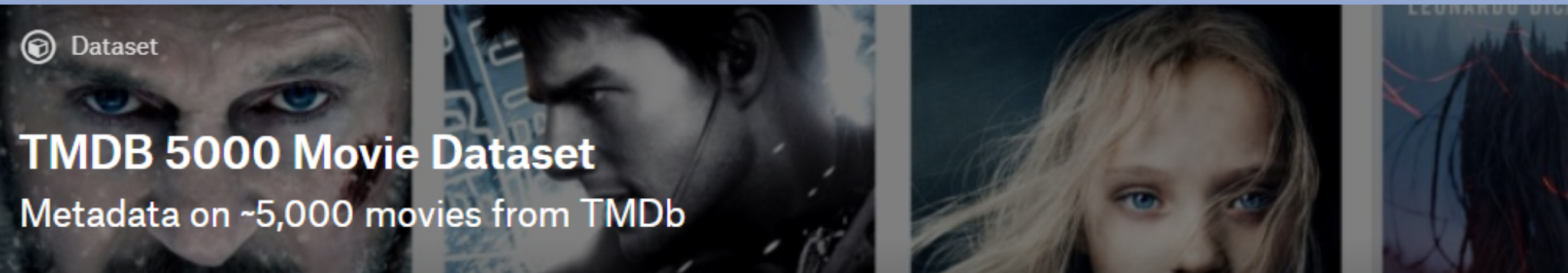
- Does 'Feminism' Sell in Hollywood?

me too

The Bechdel Test



Data Acquisition and Cleaning



Kaggle TMDB dataset combined

- 5000 movies dataset
- 5000 credits dataset

Features:

- Actors as nodes
- Gender (removed unknown)
- Genre (firstly indicated)
- Profit and vote average calculated
- Bechdel Test

Model Selection

- **Adjacency construction - 3 approaches**

- 1) Co-appearance
- 2) Co-appearance + Gender
- ✓ 3) Co-appearance + Bechdel Test

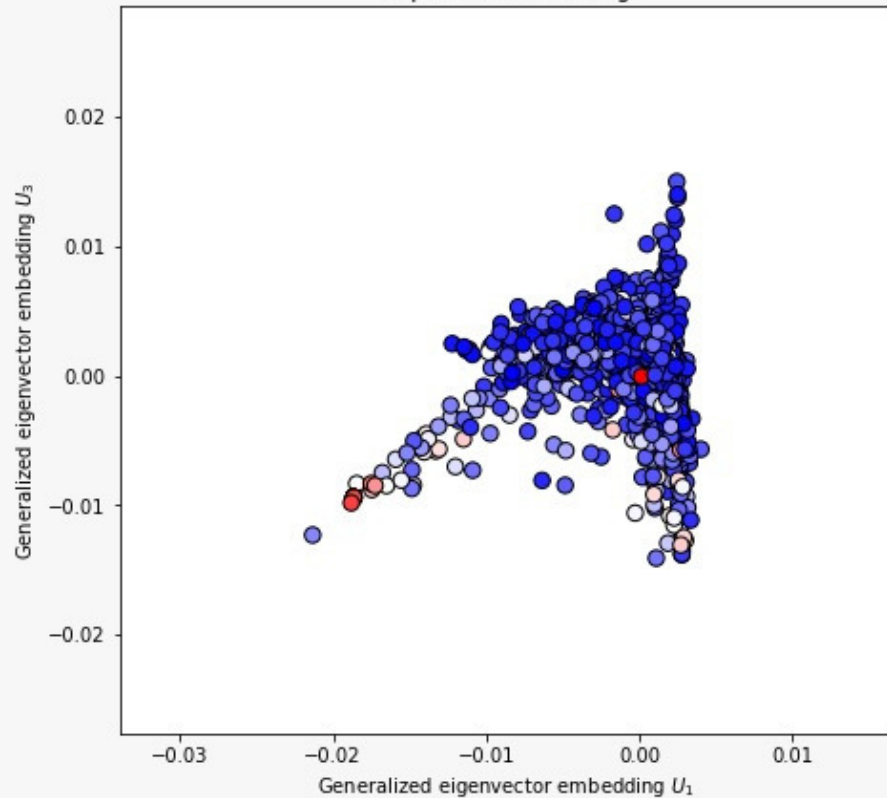
- **Features (Signals)**

- 1) Gender
- 2) Genre
- 3) Profit
- 4) Vote Average

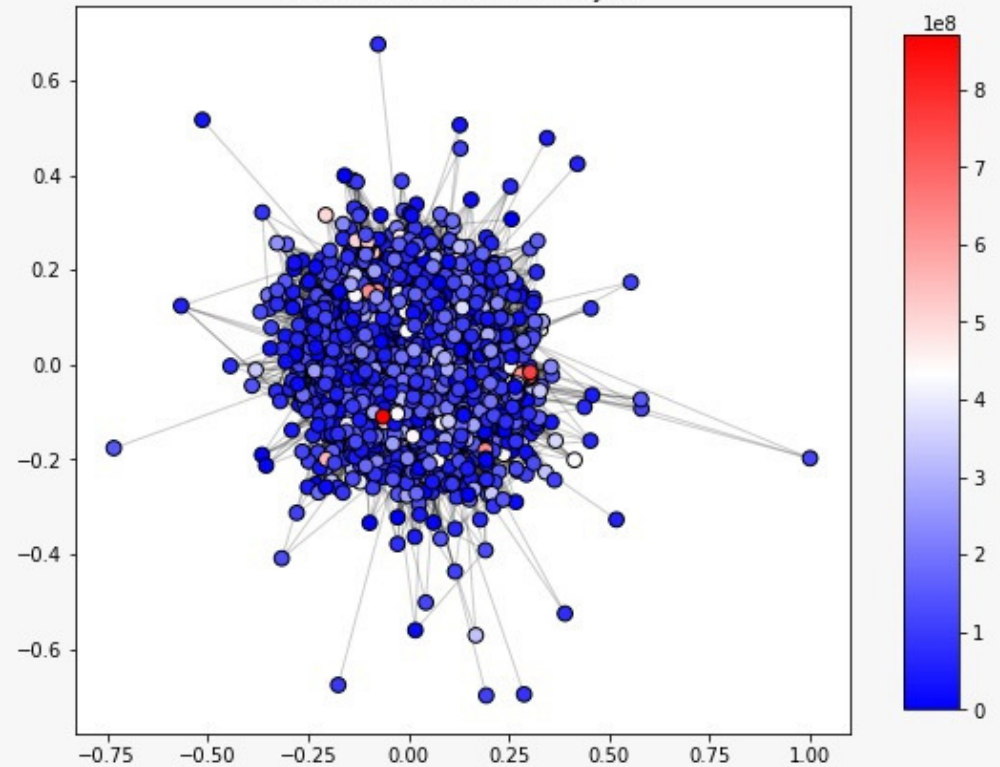
Network Analysis

Signal = Ground truth labels

Laplacian Embedding



NetworkX Force-directed layout

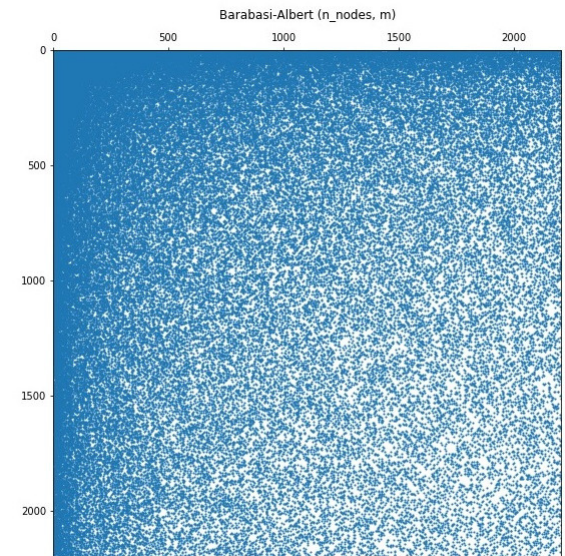
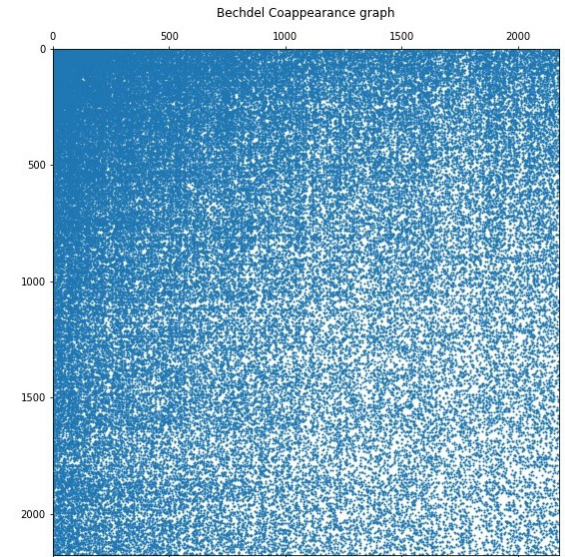


Network Analysis

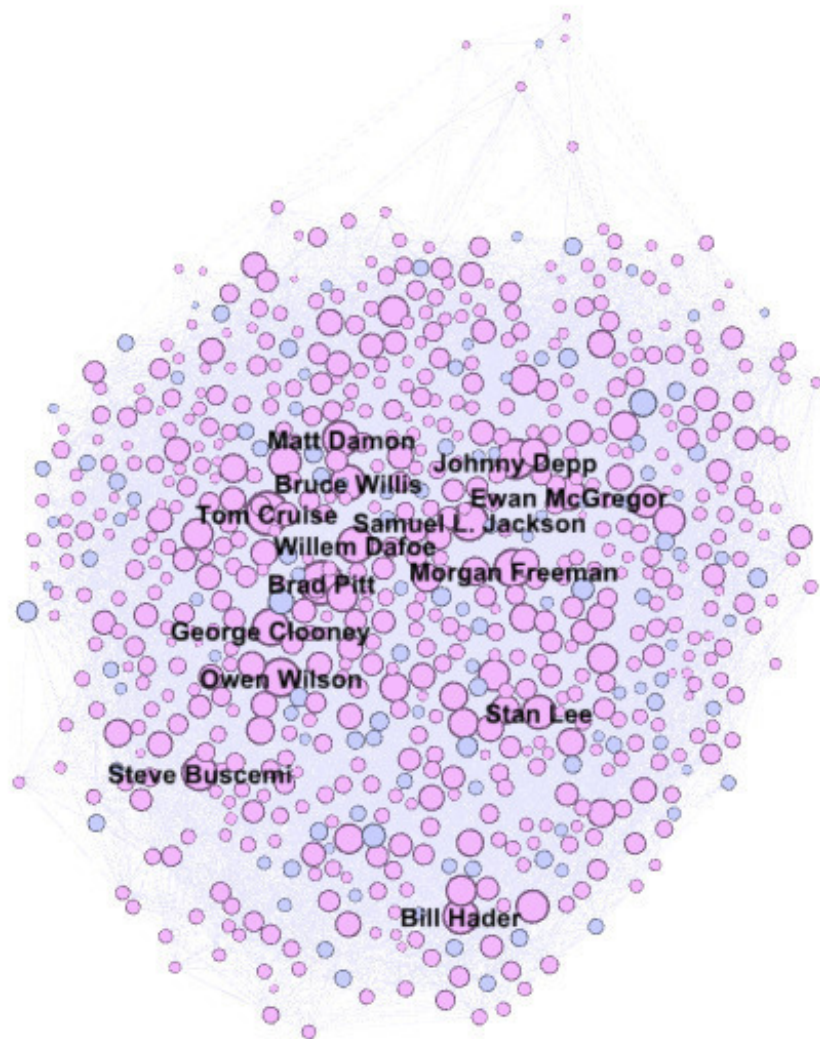
K-L Divergence: 0.37

Barabasi-Albert Properties:

- Random Scale Free Network
- Social Network Behavior



Results



Average Statistics :

Degree: 38.9

Clustering Coefficient: 0.253

Path Length: 2.2

Main Insights :

- Male dominated
- Character centered movies
- Male sex symbols

Bechdel Negative

Results

Average Statistics :

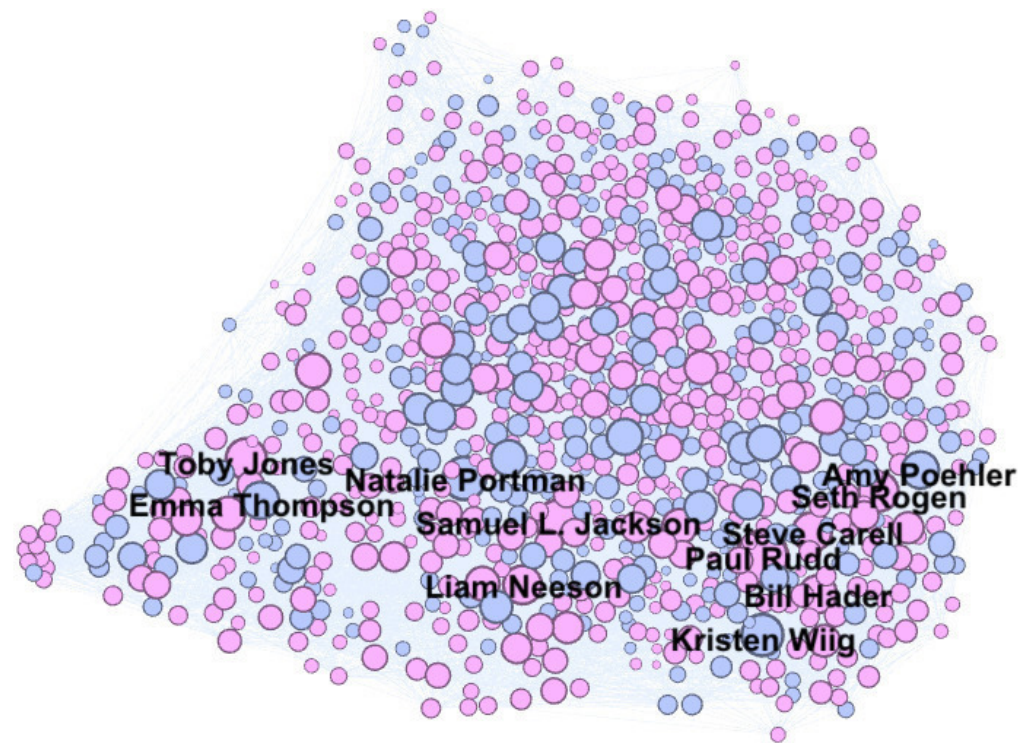
Degree: 43.7

Clustering Coefficient: 0.255

Path Length: 2.2

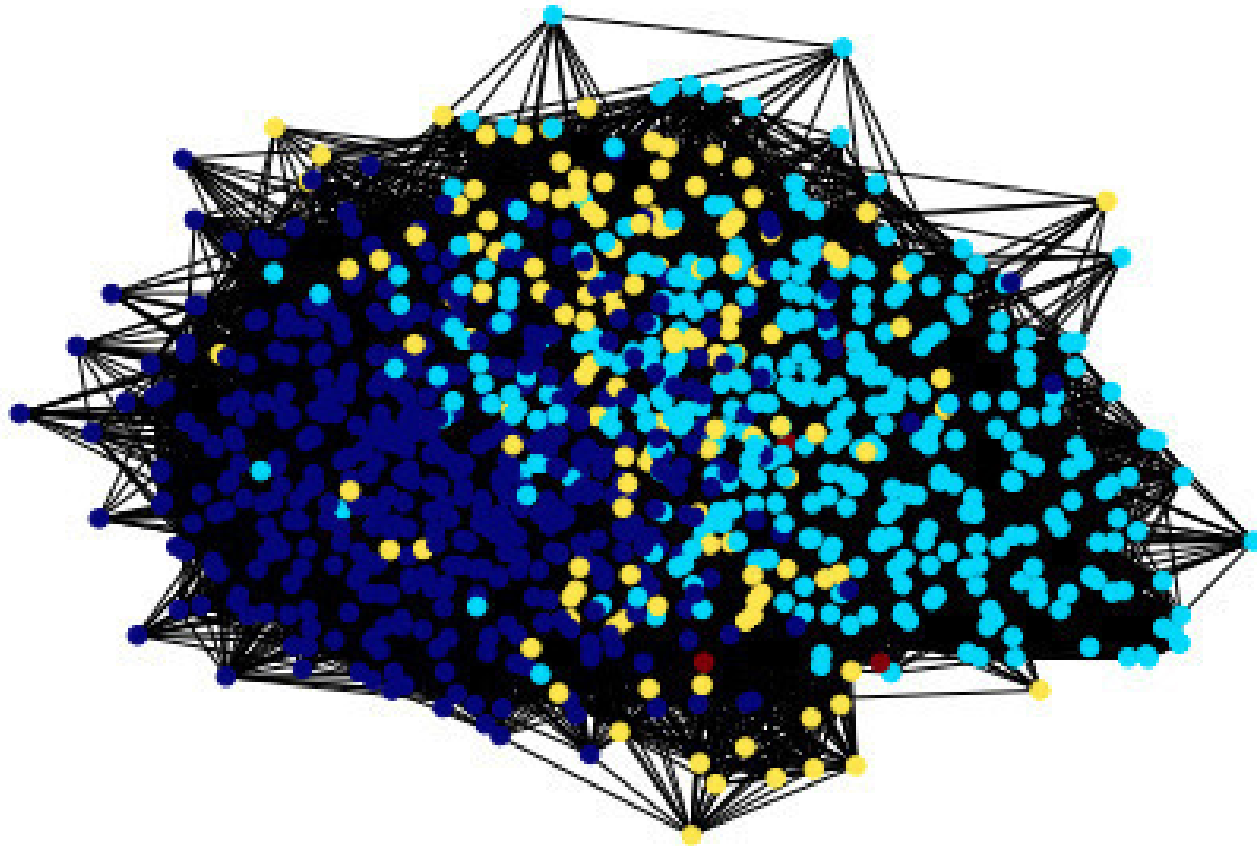
Main Insights :

- Gender balanced
- More profit on average
- More awards (Top 10)



Bechdel Positive

Modularity



Are there any communities?

Are Female actors more connected?

Are there divided by genre?

Conclusion

Bechdel Positive Network

- Gender balance in movies
- Higher profit
- Top 10:
 - 12.4 % more awards
 - 8.3 % more nominations
 - Skilled actors

Bechdel Negative Network

- Male domination in movies
- Less profit
- Top 10:
 - One man show stars
 - Good looking males
 - Sex-symbols

So does 'Feminism' sell in Hollywood after all?





That's all Folks!