Dating App Analysis

Rithika, Sonali, Amir, Yonglin

What Are We Analyzing & Why

Dating Behavior

We examine how users interact on a dating app through conversations, matches, and ghosting patterns.

User Characteristics

age, gender, education, etc. relate to engagement and behavior

App Engagement

How users interact through conversation length, match count, and messaging activity.

Why It Matters

Dating apps shape modern relationships. Understanding behavior helps improve user experience and reduce negative patterns like ghosting

How We Analyzed the Data

- Cleaned and standardized column names for consistency
- Removed outliers using Z-scores
- Engineered new features (ghosting rate, conversation success rate, age filter range)
- Ran exploratory data analysis using bar charts, histograms, and boxplots
- One-hot encoded categorical variables for machine learning
- Trained a Random Forest model using safe, non-leaky features

Questions Asked

Boxplot

Do different age groups communicate differently?

Bar Chart

Does education level affect how many ghosting occur after the first message?

Pie Chart

What is the gender breakdown of users?

Histogram

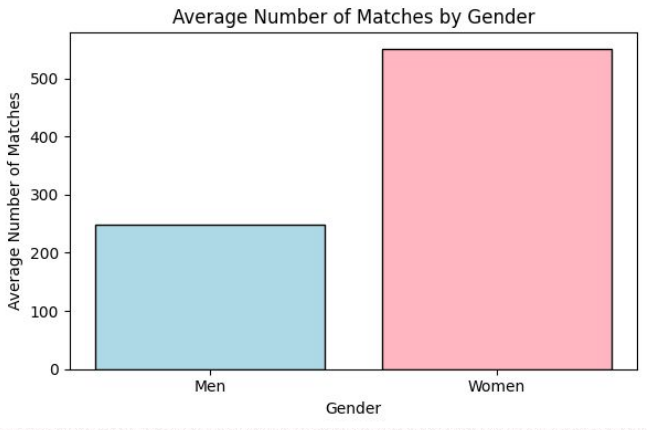
What is the age distribution of users

Bar Chart

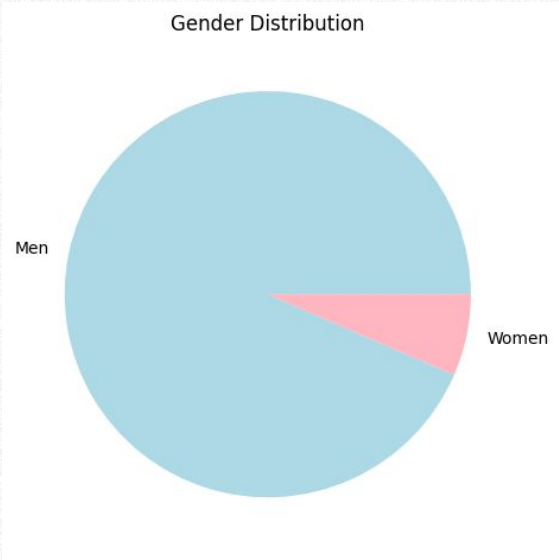
Do men and women receive different numbers of matches?

Results/Visualizations

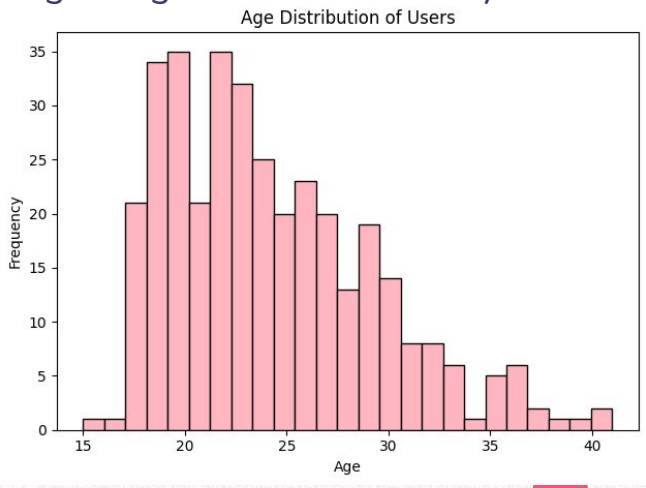
Women receive 2x more matches than men



More men on the dating app

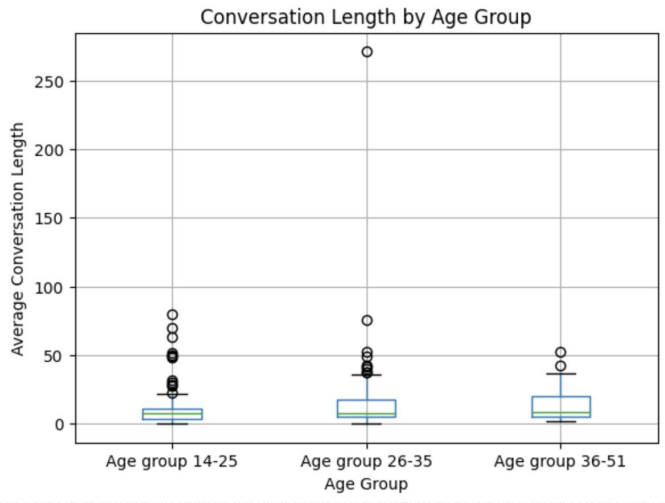


Age range is around 19-22 year olds

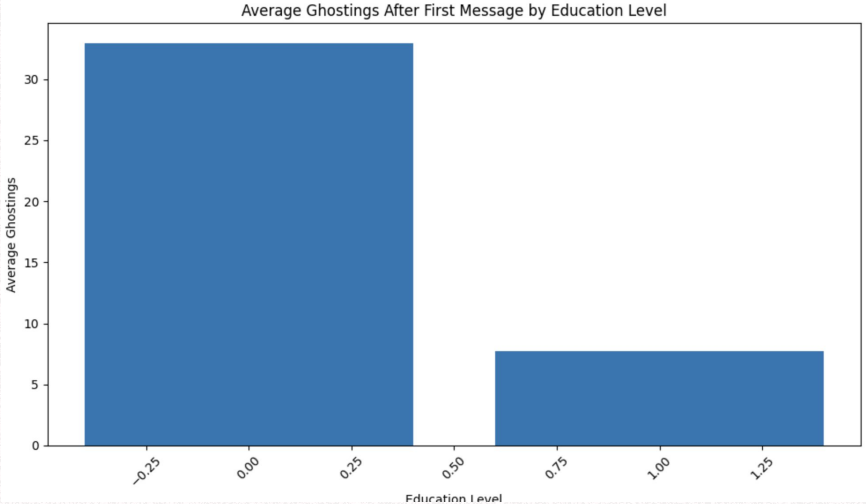


Results/Visualizations

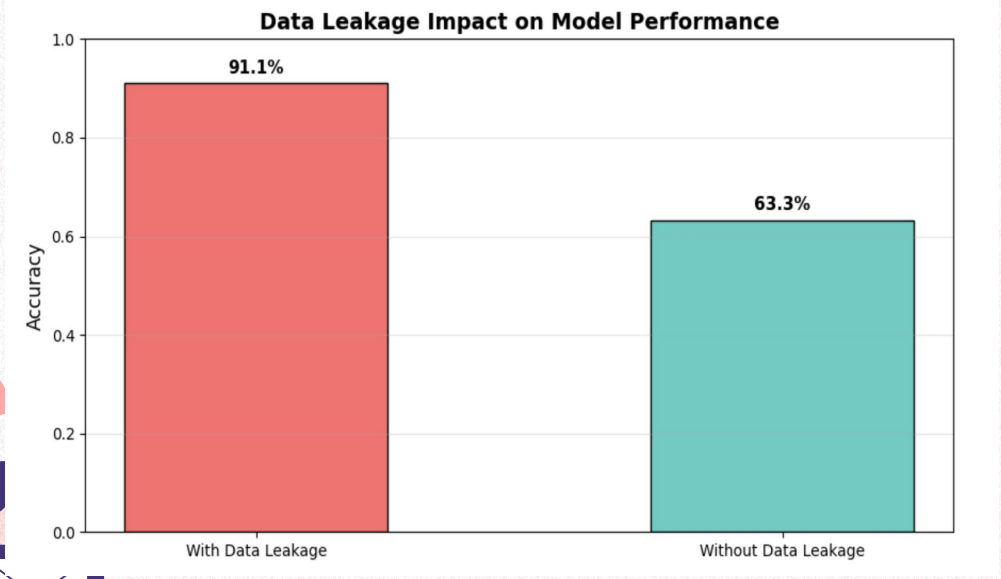
Age doesn't strongly influence engagement patterns



Educating is a significant factor in dating app success



Machine learning analysis



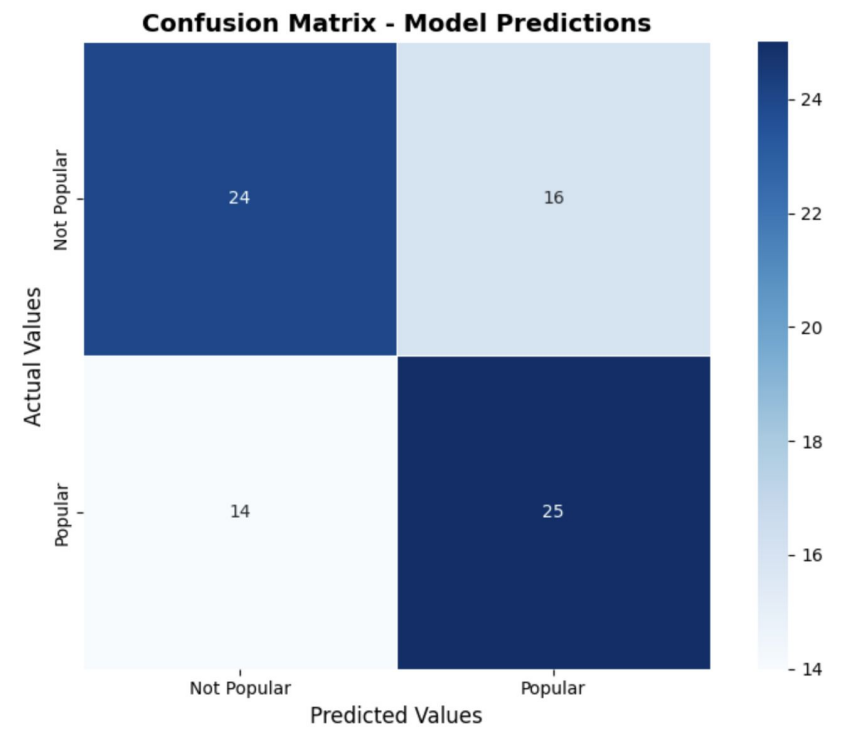
Real Model Accuracy: 67.6%
Top Features:

1. Age: 0.385
2. Maximum of Age filter: 0.225
3. Age_Filter_Range: 0.239
4. Minimum of Age filter: 0.151

Leakage Model variable relation:
Number of Conversations: 0.848 (strong positive)
Number of Ghostings after 1st Message: 0.638 (strong positive)
Maximum of Age filter: 0.211 (moderate positive)

Confusion matrix heatmap

“We used a Random Forest classifier to predict whether a user would be a high-match user based on age and age-filter settings.”



Conclusion & Impact

Men should expect fewer matches - it's normal, not a reflection of them personally
Education level correlates with ghosting behavior - certain education levels ghost way more
Wider age filters = more matches - casting a wider net increases your chances

Thank You!