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# BlockBuster Movie Recommendations

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# Purpose

## Transition into an online platform

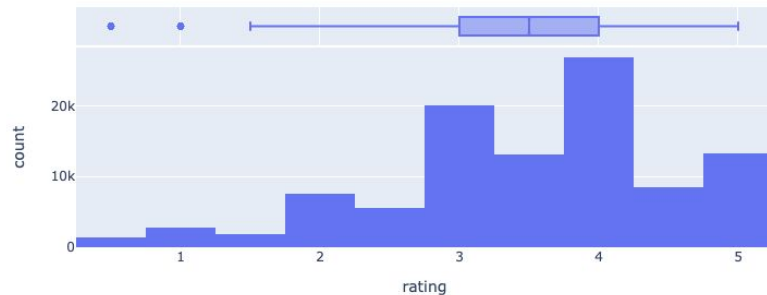
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- Context:
  - BlockBuster is transitioning to online streaming for the first time
  - Our brand new platform needs a homepage with recommendations for our users
- Given our dataset:
  - Explore high level trends in the data
  - Create Recommendation Engine
  - Generate an outline for our homepage
- Headwinds:
  - Our recommender system is based upon user ratings for movies
    - Some movies don't have ratings
    - Some users have not rated an item
- Solution:
  - Take a generalized approach, add personalization where appropriate

# Early Findings

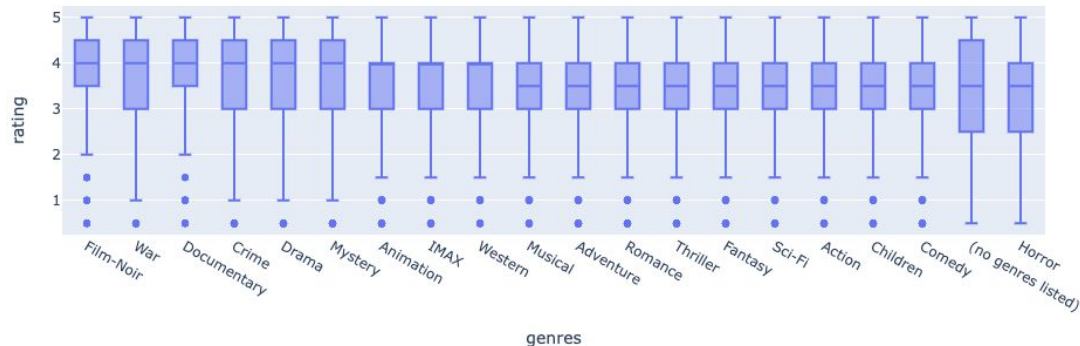
## Ratings

Distribution of Ratings



- Many ratings are between 3 and 4, with 3.5 being the median
- Significant negative skew
- Most ratings are whole numbers

Distribution of Ratings Across Genres



- Most Favorable:
  - Noir, War, Doc, Crime, Drama, Mystery
- Also Good:
  - Animation, IMAX, Western
- Notable:
  - Horror

# Cold Start

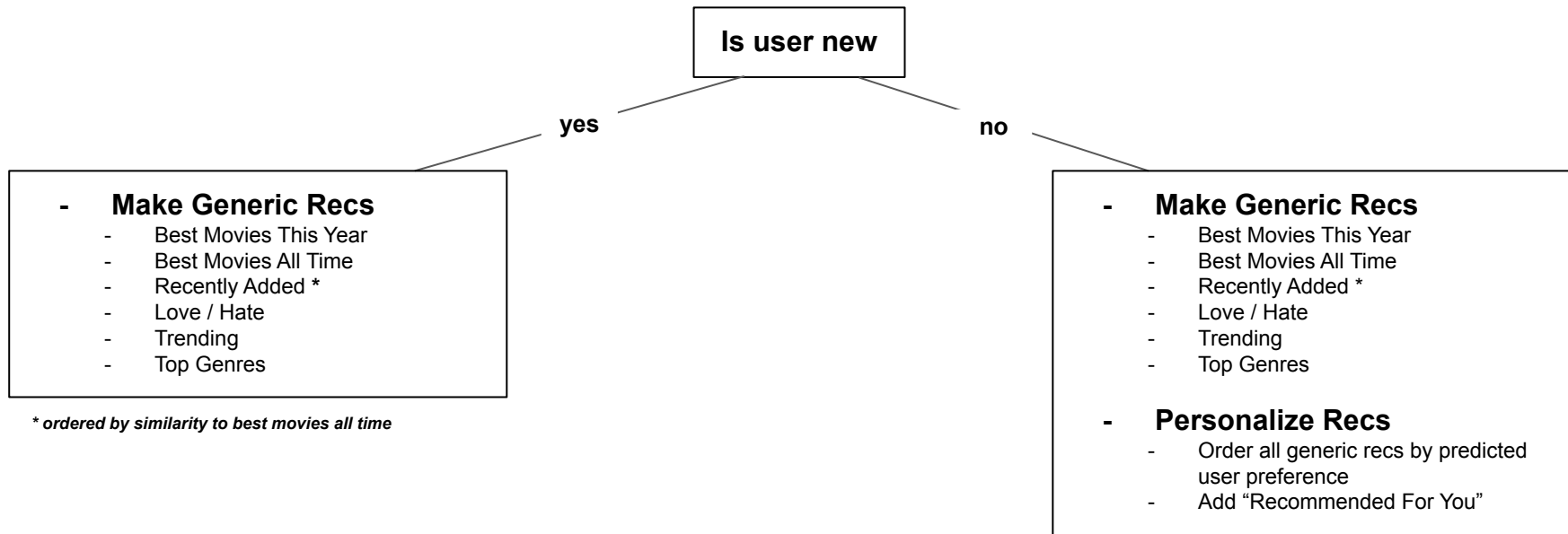
## Managing New Users and Movies

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- Our recommendation engine uses historical ratings to make suggestions
  - Both the user and the movie need multiple ratings
- New Users:
  - Take a generic approach, surface popular content until they have rated enough material
- New Movies:
  - Determine closest similarity of new movies to:
    - Top Popular movies
    - Top User Recommendations
  - Show users the top 10
- Decision Structure on next slide

# Decision Structure

## Logic for making recommendations



**No users will be recommended a film they have already seen, nor the same film more than twice**

# Final Outline

## Showing Personalized Homepage Outline

“Recommended For You” is unique to this user, based upon prior ratings

<b>Recommended For You</b>	Dr. Strangelove or: How I Learned to Stop Worr...	Shawshank Redemption, The (1994)	Boondock Saints, The (2000)	Usual Suspects, The (1995)	Ghost in the Shell (Kôkaku kidôtai) (1995)	Philadelphia Story, The (1940)	Cool Hand Luke (1967)	Godfather, The (1972)	Streetcar Named Desire, A (1951)	Lawrence of Arabia (1962)
<b>Best Movies This Year</b>	Deadpool 2 (2018)	Isle of Dogs (2018)	Avengers: Infinity War – Part I (2018)	Solo: A Star Wars Story (2018)	Ant-Man and the Wasp (2018)	Mission: Impossible – Fallout (2018)	Annihilation (2018)	A Quiet Place (2018)	Incredibles 2 (2018)	Tomb Raider (2018)
<b>Best Movies of All Time</b>	Dark Knight, The (2008)	Princess Bride, The (1987)	Fargo (1996)	Inception (2010)	Fugitive, The (1993)	Lion King, The (1994)	Apollo 13 (1995)	Aladdin (1992)	Speed (1994)	True Lies (1994)
<b>Recently Added</b>	Shawshank Redemption, The Remastered (2025)	Forrest Gump Remastered (2025)	Matrix, The Remastered (2025)	Star Wars: Episode IV – A New Hope Remastered ...	Fight Club Remastered (2025)	Silence Remastered (2025)	Short Term 12 Remastered (2025)	Who Killed Chea Vichea? Remastered (2025)	Gintama: The Movie Remastered (2025)	Angel's Egg Remastered (2025)
<b>Love It or Hate It</b>	Groundhog Day (1993)	Die Hard (1988)	Beauty and the Beast (1991)	Babe (1995)	Die Hard: With a Vengeance (1995)	Stargate (1994)	Twister (1996)	Austin Powers: The Spy Who Shagged Me (1999)	Ace Ventura: Pet Detective (1994)	Batman Forever (1995)
<b>Trending</b>	Goodfellas (1990)	Snatch (2000)	Office Space (1999)	Inglourious Basterds (2009)	Up (2009)	Dark Knight Rises, The (2012)	Batman Begins (2005)	Heat (1995)	Iron Man (2008)	Face/Off (1997)
<b>Film-Noir</b>	Chinatown (1974)	Sunset Blvd. (a.k.a. Sunset Boulevard) (1950)	Miller's Crossing (1990)	Maltese Falcon, The (1941)	L.A. Confidential (1997)	Strangers on a Train (1951)	Third Man, The (1949)	Drive (2011)	Dark City (1998)	Grifters, The (1990)
<b>War</b>	Great Escape, The (1963)	Boot, Das (Boat, The) (1981)	Glory (1989)	The Imitation Game (2014)	M*A*S*H (a.k.a. MASH) (1970)	Black Hawk Down (2001)	300 (2007)	Crimson Tide (1995)	Patriot, The (2000)	Hot Shots! Part Deux (1993)
<b>Documentary</b>	Hoop Dreams (1994)	Crumb (1994)	Fog of War: Eleven Lessons from the Life of Ro...	Exit Through the Gift Shop (2010)	Inside Job (2010)	Roger & Me (1989)	Sicko (2007)	Spellbound (2002)	March of the Penguins (Marche de l'empereur, L...	Jackass: The Movie (2002)
<b>Crime</b>	Lock, Stock & Two Smoking Barrels (1998)	Casino (1995)	Traffic (2000)	True Romance (1993)	Bourne Supremacy, The (2004)	Bourne Ultimatum, The (2007)	Hangover, The (2009)	Clear and Present Danger (1994)	Get Shorty (1995)	Net, The (1995)
<b>Drama</b>	Donnie Darko (2001)	Requiem for a Dream (2000)	Django Unchained (2012)	Game, The (1997)	Mr. Holland's Opus (1995)	Sleepless in Seattle (1993)	Quiz Show (1994)	Interview with the Vampire: The Vampire Chroni...	Outbreak (1995)	Star Trek: Generations (1994)
<b>Mystery</b>	Hot Fuzz (2007)	Citizen Kane (1941)	Harry Potter and the Deathly Hallows: Part 2 (...)	Shutter Island (2010)	Sherlock Holmes (2009)	Blue Velvet (1986)	District 9 (2009)	Thomas Crown Affair, The (1999)	Client, The (1994)	Scream (1996)
<b>Animation</b>	Wallace & Gromit: The Wrong Trousers (1993)	Toy Story 3 (2010)	Wallace & Gromit: A Close Shave (1995)	Jungle Book, The (1967)	South Park: Bigger, Longer and Uncut (1999)	Toy Story 2 (1999)	Chicken Run (2000)	Lady and the Tramp (1955)	Kung Fu Panda (2008)	Pocahontas (1995)

All other fields are ordered by the predicted rating for this user

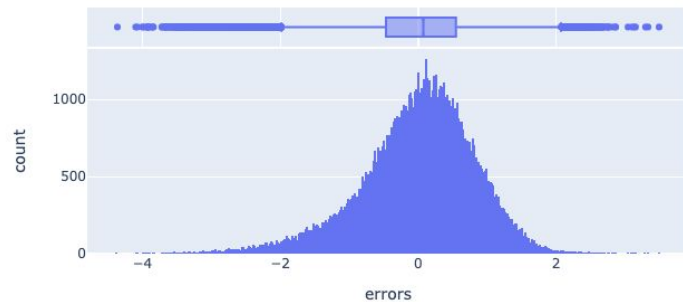
# Forward

## Next Steps and Recommendations

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- Launch platform with provided approach
- Continue to gather more data
  - Test other recommendation engines
- Attempt to segment users and possibly tailor recommendation engines to them
- Build system for implicit ratings

Distribution of Model Error



# Thank You

John O'Donnell