USING AI IN THE MOVIE PRODUCTION

Sami Arpa
What is the decision mechanism?

GUT FEELING
WE FIND RECIPES OF SCRIPTS

Now that we can have more complicated conversations, the smart people at NASA have sent me instructions on how to hack the rover so that it can talk to Pathfinder. If I hack a tiny bit of code, just twenty instructions in the Rover's operating system, NASA can link the rover to Pathfinder's broadcasting frequency... and we're in business.

(Continued)

CONTINUED:

Mark waits patiently at the computer.

Text pops up on Mark's screen. As he reads:

VENKAT (V.O.)

*Mark, this is Vincent Kapoor...

INT. JPL - GARAGE - NIGHT

Vincent and Bruce huddle around Tim's console while Vincent dictates and Tim types.

VINCENT
WE FIND RECIPES OF VIDEOS
We predict the genome of a script.
Empower your gut feeling with artificial intelligence
LEARNING FROM A RICH DATA

400,000
Movies/series metadata

1,800,000
Talents analyzed

49,000
Movie scripts/dialogues analyzed

25,000
Movie trailers analyzed

%80+
Accuracies in greenlight forecasts

5 min.
Required analysis time for a project
A TEAM OF SCIENTISTS & FILMMAKERS

Sami Arpa  
CEO / Founder  
PhD in Computer Vision  
Film director  
Director of Ouchy Film Awards

Javier Krause  
20+ years experience in movie distribution.  
Produced 5 feature films

Rodrigo Galavis  
Buss. Dev. Man. - US  
15+ years experience in movie industry.  
Produced 3 TV series, and many TV ads

Ilaria Lauzana  
Tech Lead  
MS in Computer Science  
Strong Experience in Machine Learning (+5 years)

Berk Dogan  
R&D, Data Sci.  
MS in Computer Science  
ETH Zurich  
Strong Experience in Computer Vision

Prof. Sabine Susstrunk  
Scientific Advisor  
Co-founder of Largo  
Head of IVRL, EPFL  
SRG SSR, Board Member
EVOLUTION OF AI
IN FILM INDUSTRY

Recommendation Systems
AI – FOR AUDIENCE MATCHING

Original Content by Platforms
AI - FOR PRODUCING RIGHT CONTENT

2006-2007

2013 - 2015

Age of Data and AI
DATA & AI PROOF, STATE-OF-ART

2025
COVID AND DIGITAL TRANSFORMATION

Rapid change

Uncertainty

Access to financing

Understand audience

Enlarge the investment pool for the movies
Do you want a robot to write and develop my film?

Data-driven moviemaking or data-assisted moviemaking?
AI IS NOT A MAGIC STICK FOR THE MOVIE INDUSTRY

IT IS A MAGNIFIER
WHICH FILM MADE MORE BOX OFFICE?

FILM A:

FILM B:

FILM C:
WHICH FILM MADE MORE BOX OFFICE?
WHICH FILM MADE MORE BOX OFFICE?

FILM A:

FILM B:

FILM C:
WHICH FILM MADE MORE BOX OFFICE?

FILM A:
3.7M USD
Gross Box Office
Oscars:
2 nominations

FILM B:
1’000M USD
Gross Box Office
Oscars:
9 nominations, 2 wins

FILM C:
81M USD
Gross Box Office
Oscars:
1 nomination
WHICH FILM MADE MORE BOX OFFICE?

The portrait of a lady (1996)
- 3.7M USD
- Oscars: 2 nominations

Joker (2019)
- 1'000M USD
- Oscars: 9 nominations, 2 wins

The drive (2011)
- 81M USD
- Oscars: 1 nomination
Annia Hall (1977)
Manhattan (1979)
Match point (2005)
Midnight in Paris (2011)
The Shawshank Redemption
Little Women (2019)

Budget: 40M $
US B.O.: 108M $
Gross: 216M $

Costume drama
Period piece
18th cen.
Literature
Passionate
Romantic
Relationships
Marriage
Women
Love
Wedding
Books

Action
Adventure
Comedy
Crime
Drama
Horror
Romance
Sci-Fi
Thriller

Adults
All audiences
Teenagers/Adults

sections
sections
CASTING MATCH

JO JO
94.9%
- Match Rate
- JoJo Renan
- 36 yr
- Why proposed? Possible relationships:
  - FASCINATING, BASED ON A BOOK, 18TH CENTURY,
    WOMEN, PERIOD PIECE, LOVE, 18TH CENTURY, LITERATURE

MEG
87.4%
- Match Rate
- Emma Watson
- 30 yr
- Why proposed? Possible relationships:
  - BASED ON A BOOK, HARRY POTTER, ADAPTATION, YOUTH

AMY AMY
91.3%
- Match Rate
- Florence Pugh
- 24 yr
- Why proposed? Possible relationships:
  - 19TH CENTURY, WOMEN, HEROINE, INTERRACIAL

LAURIE
83.4%
- Match Rate
- Timothée Chalamet
- 24 yr
- Why proposed? Possible relationships:
  - HOMOSEXUALITY, PASSIONATE, YOUTH
FINANCIAL FORECASTS

BOX OFFICE US PREDICTIONS

- 90% Confidence: 31.3M - 175.5M
- 75% Confidence: 67.6M - 159.6M
- 60% Confidence: 78.8M - 142.3M

Most expected revenue: 104.9M
Annihilation (2018)

Budget: 50M $
US B.O.: 32M $
Gross: 43M $
CASTING MATCH

LENA
- 28 yo

Why proposed? Possible relationships:
THOUGHT-PROVOKING, ALONE IN THE WORLD, EXISTENTIALISM, UTOPIA, SCIENCE, APOCALYPSE, SOLITUDE, HUMANITY, TECHNOLOGY, PHILOSOPHY

THORENSEN
- 25 yo

Why proposed? Possible relationships:

RADEK
- 30 yo

Why proposed? Possible relationships:

SHEPPARD
- 45 yo

Why proposed? Possible relationships:
FINANCIAL FORECASTS

BOX OFFICE WORLD PREDICTIONS

90% Confidence: Most expected revenue is 22.0M with a range of 30.6M to 131.2M.
75% Confidence: Most expected revenue is 34.0M with a range of 85.1M to 104.2M.
60% Confidence: Most expected revenue is 55.6M with a range of 100M to 100M.
ACTOR POPULARITY & ACTOR MATCH
US – 6200 FILMS

-0.07  Correlation score

0.10  Correlation score
ACTOR POPULARITY & ACTOR MATCH
vs RETURN OF INVESTMENT

Positive correlation with ROI

SPAIN (191 films)
ITALY (102 films)
GERMANY (104 films)

Negative correlation with ROI

Actor popularity Actor match with character
Industry success
(Films made Gross BO > 2xBudget)
**REVENUE SHARE – US vs EUROPE**

- **2018 US Box Office**
  - 1.2B Admissions

- **2018 Europe - EAO Box Office**
  - 2.5B Admissions

The diagram shows the revenue share between Hollywood Films and European & other Films. The chart indicates the distribution of admissions between the two regions in billion Euros for the year 2018.
# FILM INVESTMENTS 2018

<table>
<thead>
<tr>
<th></th>
<th>US</th>
<th>EUROPE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Films released in US</strong></td>
<td>1800</td>
<td>1500</td>
</tr>
<tr>
<td><strong>8 Billion Euros / Total production spending</strong></td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td><strong>4.4M Euros per film / average production spending</strong></td>
<td>4.4M</td>
<td>1.3M</td>
</tr>
</tbody>
</table>


# BOX OFFICE COMPARISONS (2019)

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>WEEKLY # HOLLYWOOD FILMS</th>
<th>WEEKLY # LOCAL FILMS</th>
<th>WEEKLY # OTHER FILMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAIN</td>
<td>75%</td>
<td>17%</td>
<td>8%</td>
</tr>
<tr>
<td>ITALY</td>
<td>64%</td>
<td>19%</td>
<td>17%</td>
</tr>
<tr>
<td>GERMANY</td>
<td>66%</td>
<td>13%</td>
<td>21%</td>
</tr>
<tr>
<td>SWITZERLAND</td>
<td>88%</td>
<td>0%</td>
<td>12%</td>
</tr>
<tr>
<td>UK</td>
<td>70%</td>
<td>24%</td>
<td>6%</td>
</tr>
<tr>
<td>FRANCE</td>
<td>57%</td>
<td>38%</td>
<td>5%</td>
</tr>
<tr>
<td>TURKEY</td>
<td>35%</td>
<td>55%</td>
<td>10%</td>
</tr>
<tr>
<td>US</td>
<td>90%</td>
<td>90%</td>
<td>10%</td>
</tr>
</tbody>
</table>

The distributions of weekly box office movies in top 10
USING AI IN THE MOVIE PRODUCTION

Sami Arpa