What Makes a Good Sci-Fi Movie?

A data science endeavour by Dan Petrov
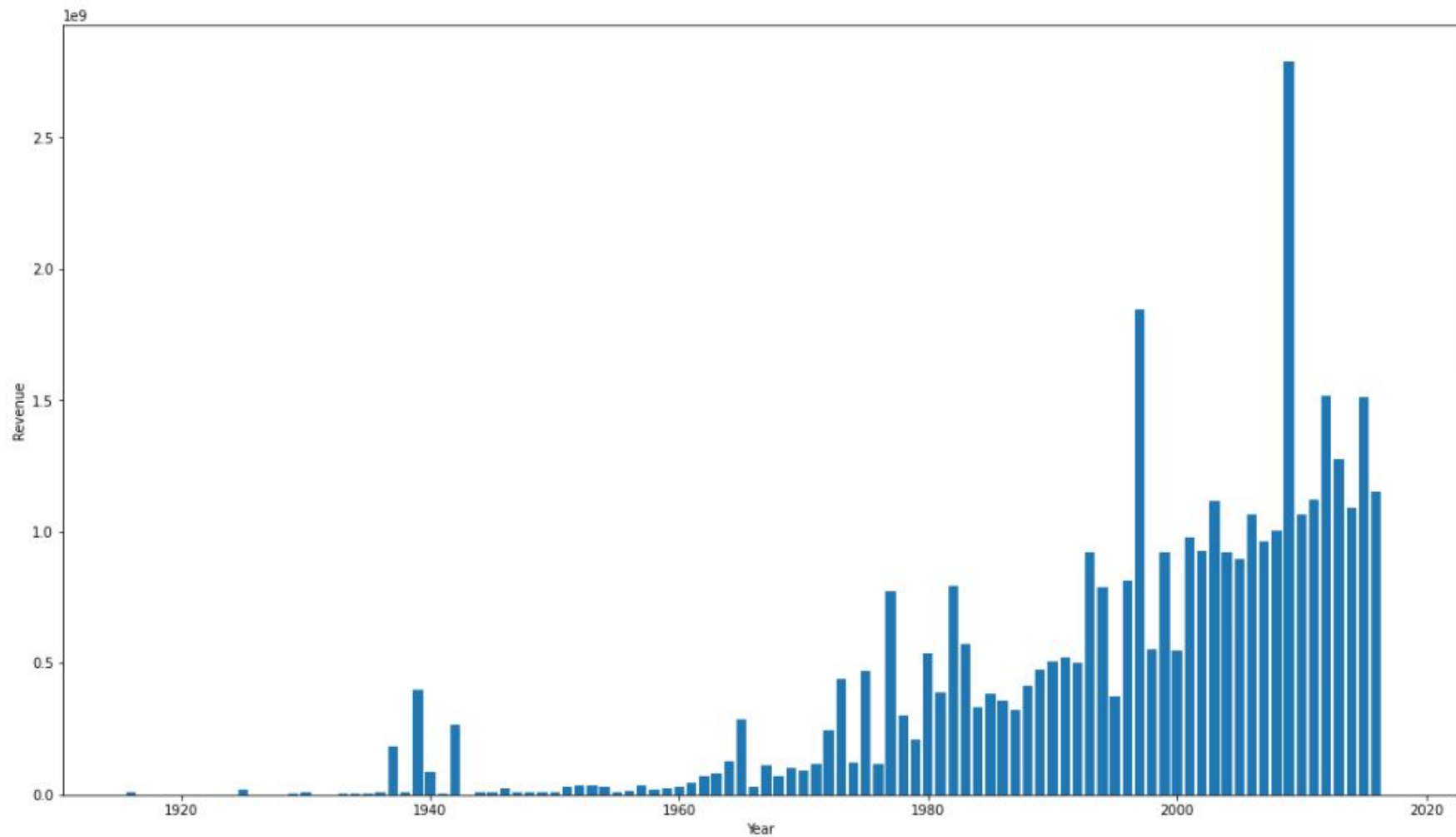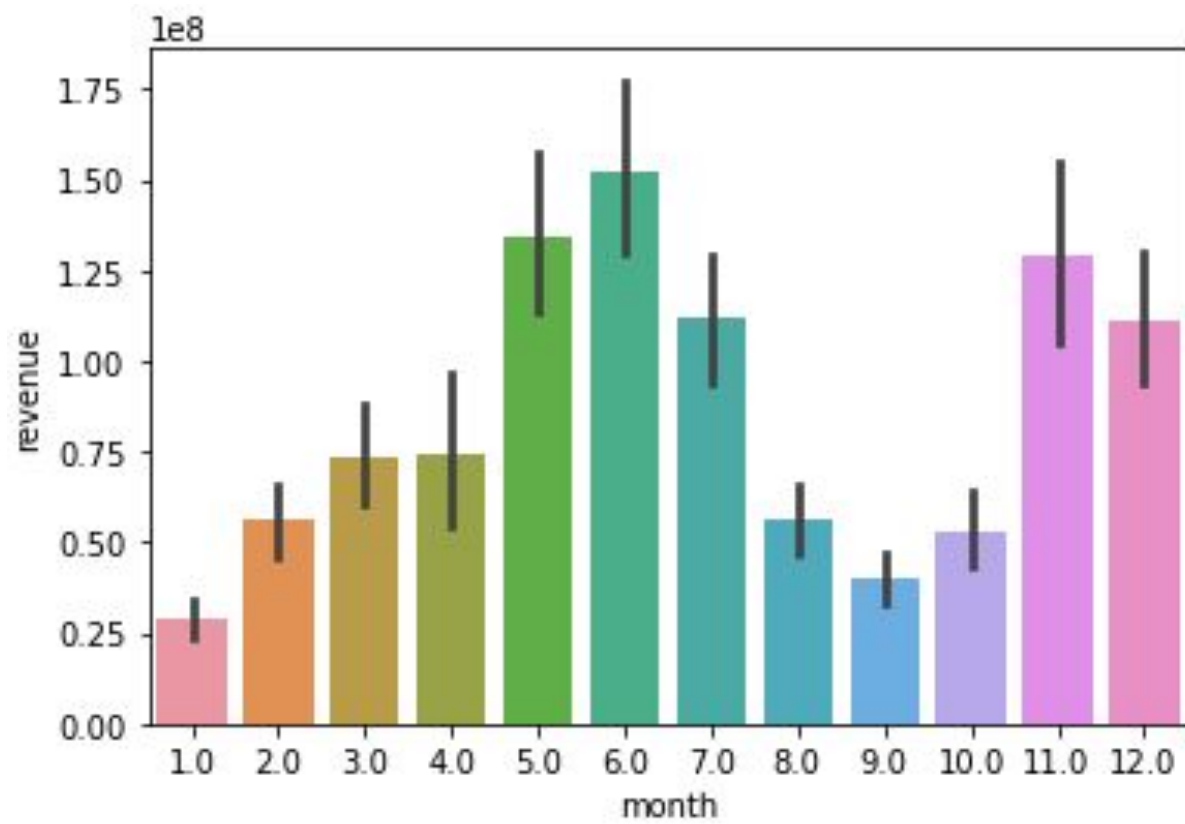
"TMDB 5000 Movie Dataset"

- From Kaggle
- Metadata: budget, genres, production_companies, production_countries, revenue, runtime, cast, crew, release_date, etc.
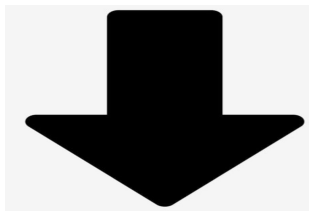
Exploratory Analysis

LOTS of pre-processing

Categorising Variables (e.g. Genres)

`[{id: 1, name: 'Action'}, {id: 2, name: 'Adventure'}, ...]`

movie_id	action	adventure	sci_fi	…	thriller
1243	1	0	1	…	1
5398	0	0	1		0

Results

Most Common Production Companies

20th Century Fox	53	Avatar, Independence Day, Star Wars, …
Paramount Pictures	48	Avengers, Transformers, Interstellar, …
Warner Bros.	44	Inception, Suicide Squad, Matrix, …
Universal Pictures	37	Jurassic Park, E.T, Back to the Future, …
Amblin Entertainment	20	Jurassic World, Men in Black, …
New Line Cinema	19	Austin Powers, Lost in Space, …
Columbia Pictures	16	2012, Terminator, RoboCop, …
Village Roadshow Pictures	15	Matrix, I Am Legend, Mad Max, …
Dune Entertainment	13	Rise of the Planet of the Apes, X-Men, …
Touchstone Pictures	13	Armageddon, Real Steel, Face/Off, …

Most Common Cast Members

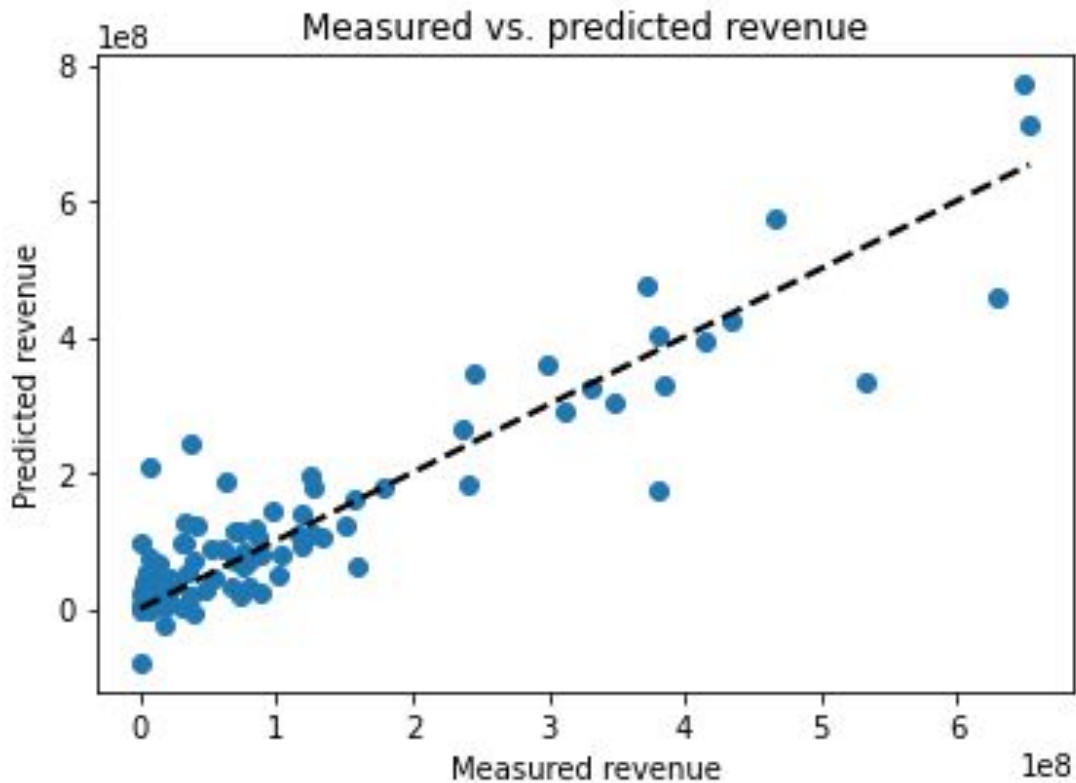|		
Samuel L. Jackson	17	MCU, Star Wars, RoboCop, …
Stan Lee	15	MCU, X-Men
Patrick Stewart	12	X-Men, Star Trek, Dune, …
Hugh Jackman	11	X-Men, Real Steel, Chappie, …
Frank Welker	11	Transformers, Jimmy Neutron, TMNT, … (voice actor)
Scarlett Johansson	10	MCU, Lucy, Her, …
Leonard Nimoy	10	Transformers, Star Trek, Atlantis, … (Spock)
Sigourney Weaver	9	Avatar, Alien Series, Paul, …
Will Smith	9	Independence Day, Suicide Squad, Men in Black, …
Arnold Schwarzenegger	9	Terminator, Total Recall, Predator, …

Most Common Crew Members

Stan Lee	27	Pretty much entirely MCU
Steven Spielberg	26	Jurassic Park, Transformers, E.T., Men in Black, …
Paul W.S. Anderson	22	Resident Evil, Death Race, Event Horizon, …
Robert Rodriguez	20	Spy Kids, The Adventures of Sharkboy and Lavagirl, ...
George Lucas	19	Star Wars, Howard the Duck (?)
Ve Neill	18	Hunger Games, X-Men, Austin Powers, …
Brian N. Bentley	17	Avengers, Jurassic World, Transformers, …
Mary Vernieu	17	Suicide Squad, Insurgent Series, Predators, …
John Carpenter	17	Escape from New York, Escape from L.A., …
James Cameron	16	Avatar, Terminator, Aliens, The Abyss, …

Most Common Production Countries

USA	391
UK	61
Canada	34
Germany	31
France	23
Australia	19
Japan	12
Hong Kong	6
China	5
Czech Republic	5

Machine Learning

Measured vs. predicted revenue

Most Influential Features

Cast: Stan Lee, Anthony Daniels, Woody Harrelson, Gwyneth Paltrow

Crew:
-   Christopher Boyes (sound engineer, 4x academy awards)
-   Louis D'Esposito (marvel producer)
-   Steven Spielberg (mad good director/producer)
-   Denny Caira (production manager)

Genre: Adventure or Action

Studio: Legendary Pictures, Lucas Film or Paramount Pictures

Thanks for Joining me on this Journey