

Predicting Movie Box Office Lifetime Gross

Kayleigh Li



Objectives



Data & Assumptions



Star Wars: The Force Awakens

Domestic Total Gross: **\$936,662,225**

Distributor: **Buena Vista**

Release Date:
December 18, 2015

Genre: **Sci-Fi Fantasy**

Runtime: **2 hrs. 16 min.**

MPAA Rating: **PG-13**

Production Budget: **\$245 million**

Summary

Daily

Weekend

Weekly

Foreign

Similar Movies

Total Lifetime Grosses

Domestic: **\$936,662,225** **45.3%**
+ Foreign: **\$1,131,561,399** **54.7%**

= **Worldwide: \$2,068,223,624**

Domestic Summary

Opening Weekend: **\$247,966,675**
(#1 rank, 4,134 theaters, \$59,982 average)
% of Total Gross: 26.5%

[View All 24 Weeks](#)

Widest Release: 4,134 theaters

Close Date: June 2, 2016

In Release: 168 days / 24 weeks

The Players

Director: J.J. Abrams

Writers: J.J. Abrams

Michael Arndt

Lawrence

Kasdan

Actors: John Boyega

Daisy Ridley

Adam Driver

Oscar Isaac

Andy Serkis

Domhnall

Gleeson

Max von Sydow

Harrison Ford

Carrie Fisher

Mark Hamill

Anthony Daniels

Peter Mayhew

Kenny Baker

Warwick Davis

Lupita Nyong'o

Producers: J.J. Abrams

Bryan Burk

Kathleen

Kennedy

Composer: John Williams

Related Stories

5/10/16 Disney Makes History, Topping \$1 Billion in Domestic Ticket Sales in Just 128 Days

2/28/16 The 'Gods of Egypt' are No Match for 'Deadpool', Which Climbs to \$285+ Million Domestically

2/25/16 'Gods of Egypt', 'Triple 9' & 'Eddie the Eagle' Hit Theaters While 'Deadpool' Threepats

2/14/16 'Deadpool' Smashes Box Office Records On Way to \$260 Million Worldwide Opening

2/11/16 Updated: 'Deadpool' Targets #1 Opening Over 'How to Be Single' & 'Zoolander 2'

2/7/16 'Kung Fu Panda 3' Tops Super Bowl Weekend; 'Hail, Caesar!' Leads Newcomers

2/6/16 'Star Wars: Force Awakens' First Ever to Cross \$900 Million Domestically

1/31/16 'Kung Fu Panda 3' #1; Holdovers Make Up for Money Lost in the Snow

1/28/16 Weekend Preview: 'Kung Fu Panda 3' To Top 'Fifty Shades of Black' and 'Finest Hours'

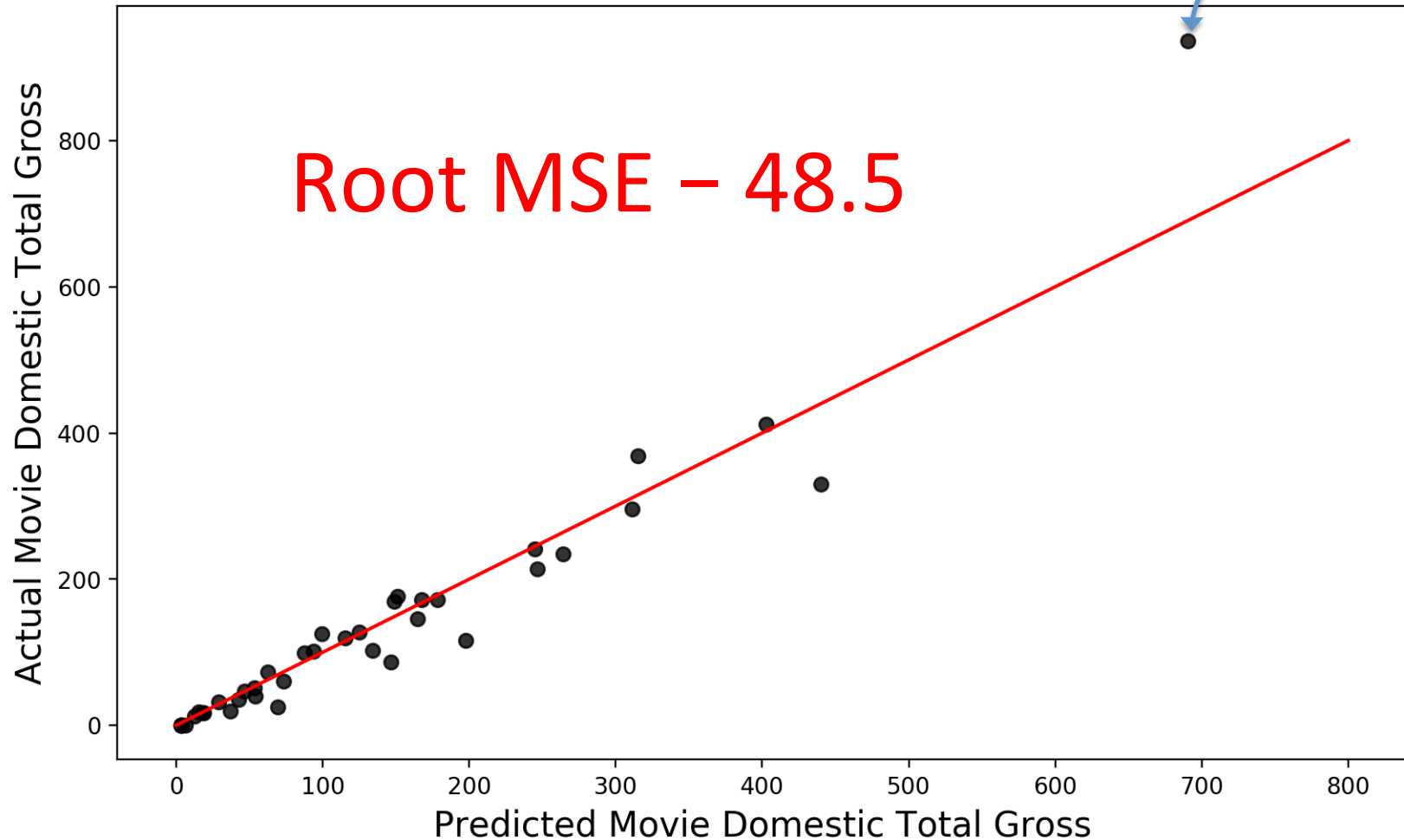
1/24/16 'The Revenant' Weathers Snow Storm While Weekend's Newcomers Perform as Expected

1/17/16 'Ride Along 2' #1 'Revenant' Holds Strong and 'Star Wars'

Model [General]

Model[General] Performance

STAR WARS!



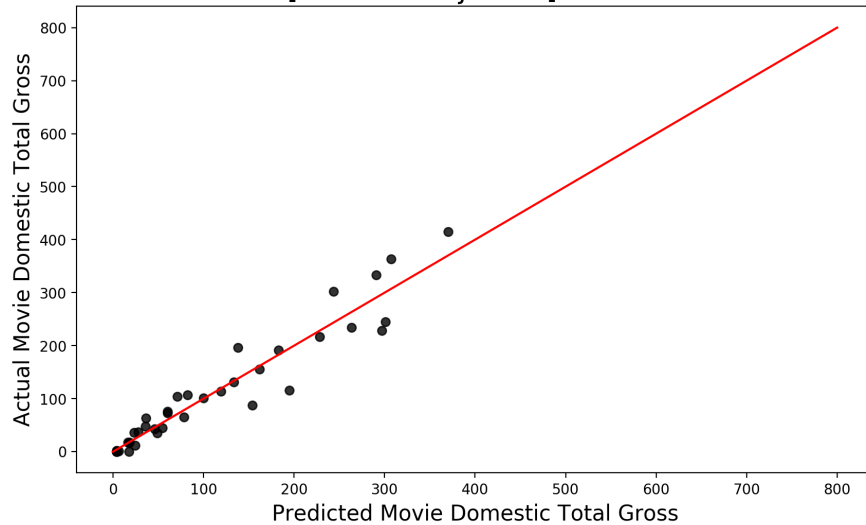
Model [General]

Movie Title	Runtime (mins)	Opening Weekend Gross (\$)	Domestic Total Gross
Star Wars: The Force Awakens	136.0	247.966675	936.662225
Avatar	160.0	77.025481	749.766139
Jurassic World	124.0	208.806270	652.270625
Marvel's The Avengers	142.0	207.438708	623.357910
Rogue One: A Star Wars Story	133.0	155.081681	532.177324
Beauty and the Beast	129.0	174.750616	504.014165
Finding Dory	103.0	135.060273	486.295561
Avengers: Age of Ultron	141.0	191.271109	459.005868

All **3D** movies,
Mostly Sci-Fi franchises

Model [General-Adjusted]

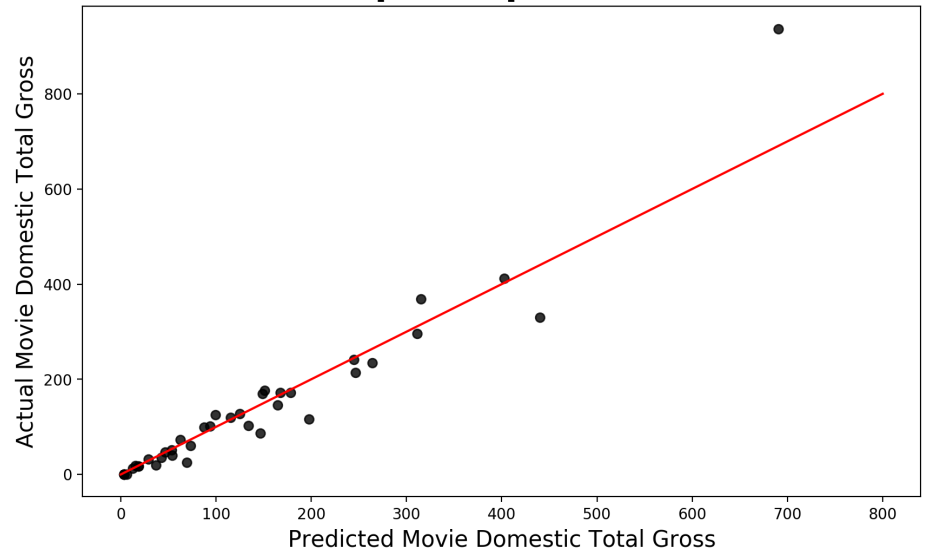
Model[General-Adjusted] Performance



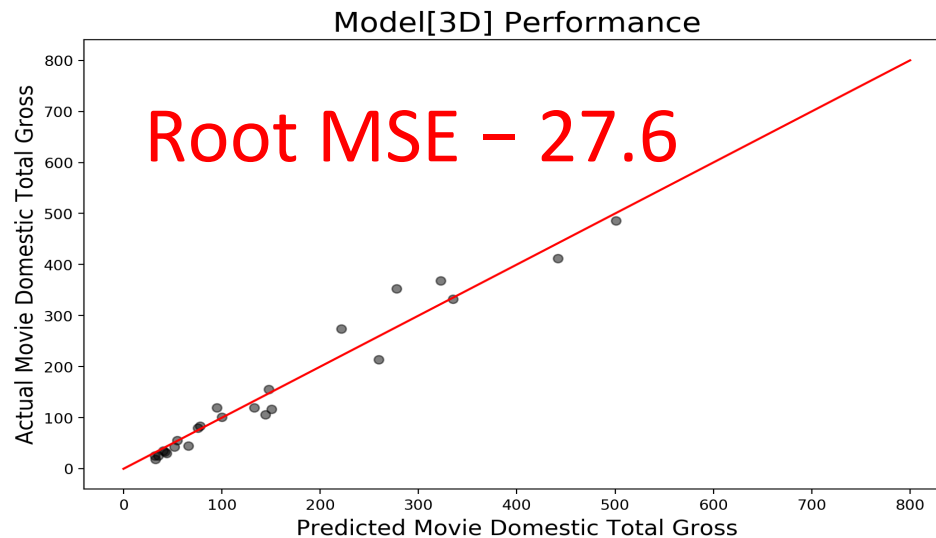
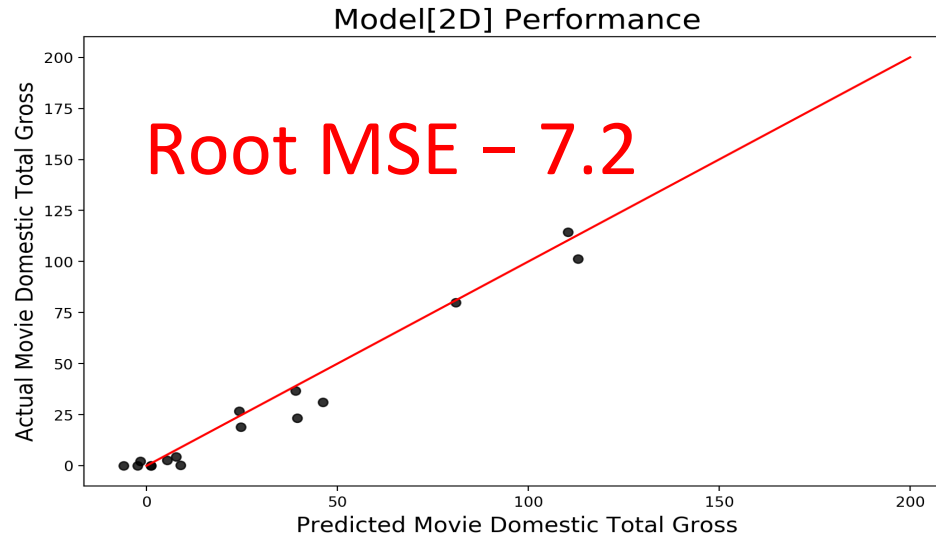
Removed Outliers →
Root MSE – 31.0

Root MSE – 48.5

Model[General] Performance



Model [3D] & Model [2D]



Insights

- ◆ 2D & 3D movies behave differently
- ◆ Apply corresponding model for gross prediction
- ◆ Most important factors determining total gross:
 - ✓ Opening Weekend Gross (+++)
 - ✓ Release month (+/-)
 - ✓ Star power (-)
 - ✓ Director value (++)

Thank You !



Feature Extraction



= 2

Actor/Actress: top 100 valuable
– lifetime gross



+



= 4

...



Director: gross of movie directed

→ Basket 1 : gross > \$60 M

→ Basket 2 : \$ 60 M > gross > \$40 M

→ Basket 3 : ...

Also, most other features (Production Budget, Release Date, etc.) ...