# Steam Game Recommendation System

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# BUSINESS PROBLEM

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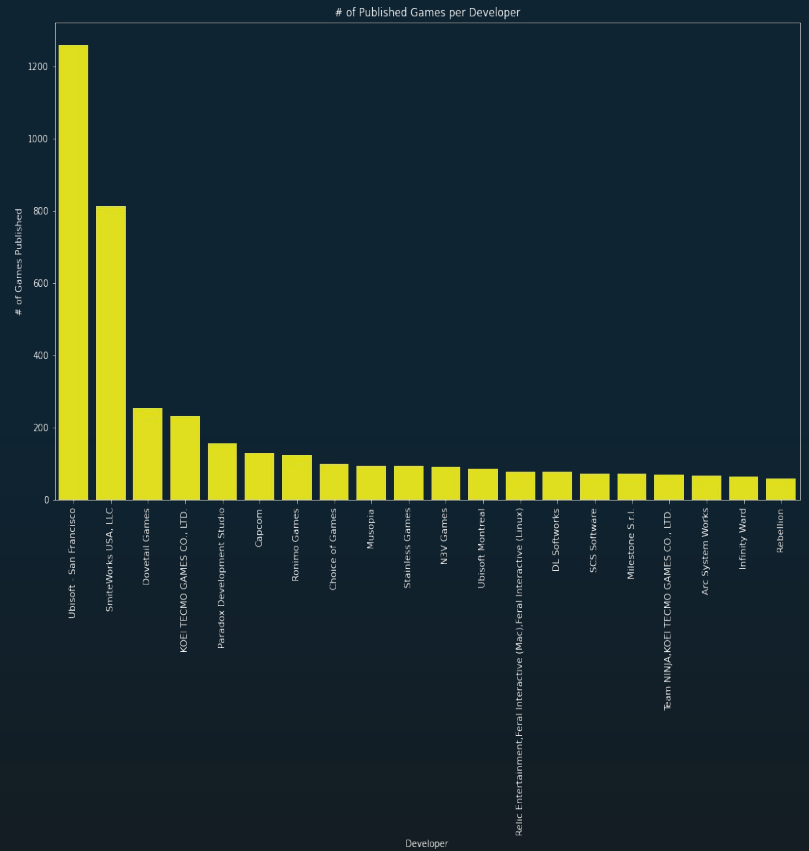
Video games sales peak during the winter holiday season, but fall off for the rest of the year. Can a recommendation system be created to drive sales year round for the game distribution companies?

# DEVELOPER INFORMATION




- Market is heavily skewed by large AAA companies that also have access to larger advertising
- Smaller developers can use this system to segment customers to better target potential players

# 02

# DATA OVERVIEW

# Data retrieval

The data is from UC San Diego Recommender System Datasets. The Steam Dataset includes:

- Reviews
- Purchases, plays, recommends
- Product bundles
- Pricing Information

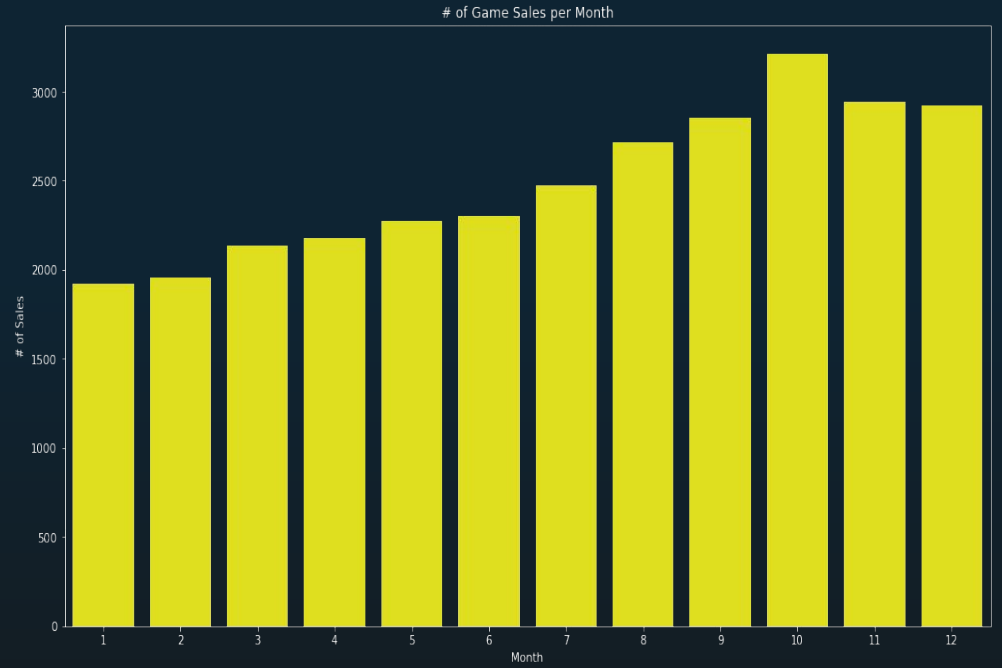
# DATA

| USERS | USER-ITEM | GAMES |
| --- | --- | --- |
| The amount of unique users from the data | The amount of users and each video game they own | The amount of unique games from the data |
| 69,304 | 4,294,257 | 9,192 |

# 03

# EXPLORATORY DATA ANALYSIS

# GAME RELEASE INFORMATION




- The beginning of each year marks the lowest sales for the year
- Game Sales peak in October, and keep a high sale rate for the rest of the year
- Want to keep profits up for the rest of the year, not just the winter season.

# 04

# MODELING

# MODEL SELECTION

- Recommend games to different users based on their Steam game library
  - Collaborative Filtering model
    - Find users with a similar game library to the new user
    - Recommend games the other users own to the new user

# MODELING RESULTS

| MODEL | RMSE |
| --- | --- |
| SVD | 0.011 |
| NMF | 0.060 |
| SVD++ | 0.004 |

## SCORING

The Root Mean Squared Error(RMSE) was used to score the models. The lower the value, the better

## RESULTS

Comparing the RMSE scores, the SVD++ model produced the best results

# 05

# RESULTS

## GAMES OWNED

- Counter Strike: Global Offensive
- Left For Dead 2
- Borderlands 2
- PAYDAY 2
- Warframe

## RECOMMENDATIONS

- Team Fortress Classic
- Day of Defeat: Source
- Deus Ex: GOTY Edition
- Half-life 2
- Joint Task Force

# 06

# NEXT STEPS

# NEXT STEPS

- Add hyper parameters to the SVD++ model
- Recommend newer games
- Create a front-end
- Create a content based recommendation system to find similar games
- Use the Steam API to get up-to-date information

# RESOURCES

**Steam data:**

**Self-attentive sequential recommendation**
Wang-Cheng Kang, Julian McAuley
*ICDM*, 2018

**Item recommendation on monotonic behavior chains**
Mengting Wan, Julian McAuley
*RecSys*, 2018

**Generating and personalizing bundle recommendations on Steam**
Apurva Pathak, Kshitiz Gupta, Julian McAuley
*SIGIR*, 2017

# THANKS

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