

First Pick Game: A Board Game Recommender System

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The Data Incubator

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The Board Game Industry and Users

- Global market size was 13.75 billion USD in 2021 ¹
- Board game enthusiasts buy and collect many games
 - Most own over ten games ²
- **Problem for users:** Too many games and types of games to decide between when purchasing a new game
 - Now over 4500 games published per year ³
 - *Key parameters:* number of players, game length, and complexity (how difficult game is to learn) are all key features when deciding what to buy next
- **Solution:** Create a recommender system with filters for board game enthusiasts, users of website boardgamegeek.com



1. "Board Games Market: Size, Share and Forecast Report to 2028." *SkyQuest Technology*, <https://skyquestt.com/report/board-games-market>.
2. Design, Developed by Dave Hewer. "5 Surprises and Insights from a Digital Board Game Survey." *Stonemaier Games*, 4 Jan. 2021, <https://stonemaiergames.com/5-surprises-and-insights-from-a-digital-board-game-survey/>.
3. <https://boardgamegeek.com/thread/2556595/number-games-published-year>

User Data and Recommender System

- **Board game geek:** popular website where users can rate and comment on games
- **For current project:** downloaded ~2 million reviews of ~200,000 unique users for ~1000 games.
- **Built recommender system for current users:**
 - SVD (Singular Value Decomposition) was found to be most effective algorithm
 - Tested by holding out some user rankings, and seeing how well predictions match actual rankings
 - RMSE (root mean squared error) of 1.31 on ten point scale
- **Future directions:**
 - *Add more data* - more games from Board game geek
 - *Add recommender for new users* - generating recommendations for new users based on game categories or initially ranking a few known games



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