

Computer Science 655 : Numerical Computation

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Topic:

Video Game Sales Analysis and Stock Prediction

Abstract:

Within the past two decades, the video game industry has erupted into a behemoth which threatens to permanently change the landscape of sports, media, and entertainment. With this growth comes potential for individuals who wish to lay claim to this newfound success through investments in publicly traded game companies and publishers such as Nintendo, Sony, and Blizzard. We believe that, by understanding fluctuations in stock price of these companies in relation to major releases, educated predictions can be made when purchasing and selling stock. By performing regression analysis to identify and forecast trends within stock values for the gaming industry, we model possible correlations between game industry stock prices and video game features including release dates, ESRB ratings, total game sales, and genre. We build models using linear, several degrees of polynomial, ridge, and lasso regressions. We then test and evaluate our models by predicting stock market changes, sales figures, and additional features from more recently released games and comparing its prediction accuracy with the titles' actual values. (Brief introduction to results will be added here once attained)

Keywords: Numerical Analysis, Regression, Linear Regression, Polynomial Regression, Prediction, Modeling, Video Game Industry, Stock Forecasting

References:

Stock Market Price Prediction Using Linear and Polynomial Regression Models

<https://pdfs.semanticscholar.org/0096/f7f6b0724c5839163b0e851b12b32f8ec908.pdf>

Video game dataset

[https://researchportal.port.ac.uk/portal/en/datasets/video-games-dataset\(d4fe28cd-1e44-4d2f-9db6-85b347bf761e\).html](https://researchportal.port.ac.uk/portal/en/datasets/video-games-dataset(d4fe28cd-1e44-4d2f-9db6-85b347bf761e).html)

Video game sales with ratings

<https://www.kaggle.com/rush4ratio/video-game-sales-with-ratings>

Commented [1]: I rewrote this a little bit as if we already did the work so we can reuse it for the final paper.

Commented [2]: Could be removed and pulled into the next sentence about individuals with something like "Due to the growth of the industry, individuals are looking to profit by investing in publicly traded video game creators such as Nintendo, Sony, Blizzard..."

Commented [3]: I always vote for the oxford comma