

Forecasting Box Office Performance Using Naive Bayes Analysis

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Summary

Films are a business venture, just like an IPO or foundation of an LLC, hence films are a very risky investment for the financial backers. The goal of this research was to build a risk management tool utilizing naïve Bayes analysis with regards to film.

To find association and correlation between external variables and box office performance, a Bayesian analysis was utilized. Bayesian analysis combines prior information about a population parameter with evidence from information contained in a sample to guide the statistical inference process (Encyclopedia Britannica, 2017). The prior information comes from the bank of information available about film performance for the past century, while evidence from a sample would be the variables known of upcoming films. To combine the priors with new films, the first step was to build a database before running it in software. The database contained the prior information of all the variables for past released films, as well as information for upcoming films that are missing the dependent variable of box office performance.

The variables used for the films were originality, Dow Jones at time of release, blockbuster season presence, true story or not, live action or not, MPAA Rating, production studio, international production or not, social relevance (ranked 1-7 on the cultural, historical, or aesthetic significance of each film), and the dependent variable of box office performance.

After running the model through Bayes theorem, we built a tool within Excel that predicts if a film is going to be profitable or not, as well as giving coefficient values of the variables to box office performance.

References

The Editors of Encyclopedia Britannica. "Bayesian Analysis." *Encyclopedia Britannica*. Encyclopedia Britannica, Inc., 01 Feb. 2016. Web.

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Bio:

Benjamin Atwater is a Senior double majoring in Marketing and Public Relations with a minor in Economics. Atwater is very involved on campus, being an RA, a member of the band, an undergraduate assistant for the Department of Economics, and a member of the Model United Nations. Interning at several companies, including an Israeli nonprofit in the summer of 2016, Atwater is passionate about film and international affairs and looks to pursue a career in those fields.

