Automated Bugs Identification Through Early Access Game Review Analytics on Game Distribution Platforms

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Background

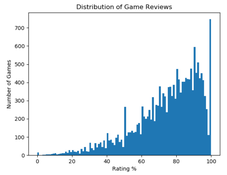
- The game industry has become one of the most **profitable markets** in the entertainment industry.
- Knowing what users think and how they feel about a game is a central piece to drive the **decision making process**.
- **Studying gamer reviews** help developers better understand the concerns and further improve the user perceived quality.

Research Questions

RQ1: What kind of techniques has been proposed in past for classification and identification of bugs from gaming reviews?
RQ2: What classification and evaluation metrics are used?

Experimental Data

- Early access games review's from Game distribution platform **STEAM**.



Method

- Using **Game STEAM platform** as a case study to collect reviews of games using custom scraper.
- **Pre-processing** (Cleaning, NLP techniques, labeling) of the reviews.
- Deep learning model **(Convolutional neural network)** multi-label review classifier is used for classification of reviews into defined set of labels.
- Testing data for the evaluation of the model.

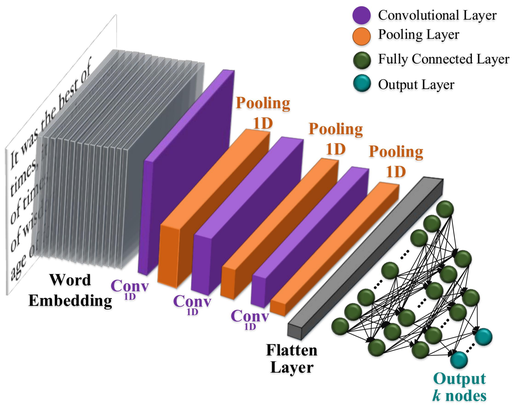


Figure 1.1 Convolutional Neural Network

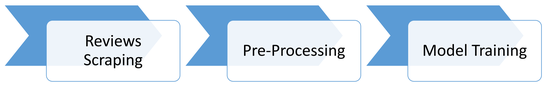


Figure 1.2 Methodology Steps

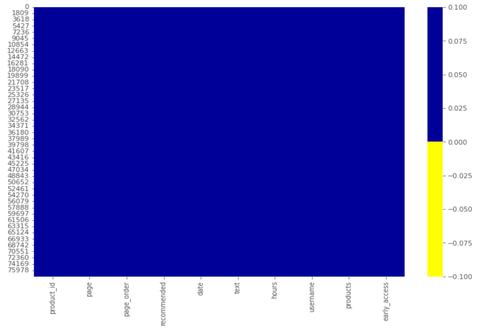


Figure 1.3 Data representation after Pre-processing

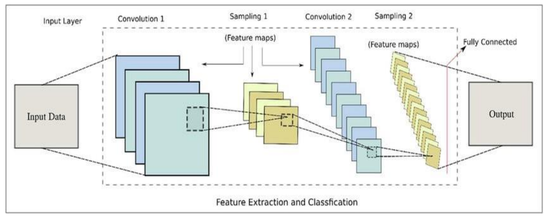


Figure 1.4 CNN Model

Results

- Results are concluded for the after the synthetically labelling of the first **500 reviews** of different game.
- With the partition of data **70% training data** and **30% test data**.
- CNN was able to predict the bugs from reviews with **72% accuracy**.

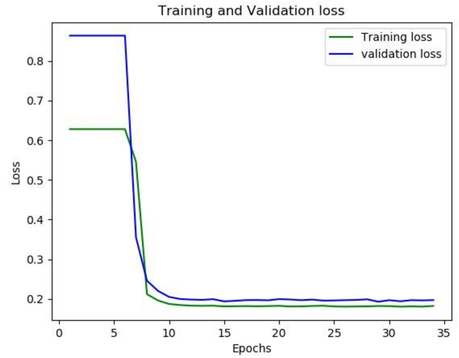


Figure 1.5 CNN Model training and validation loss

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