

Machine Learning

Machine Learning Assignment

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# Machine Learning Subfields

Machine learning and artificial intelligence is most advanced technologies. Machine learning algorithm is vastly used to train data and get exact result according to our requirements. Most popular Google search engine used machine learning algorithm. Social networking sites also used machine learning algorithm, Facebook, Twitter, YouTube, Instagram, and email spam filter is also used to save time. (Das & Dey, 2015)

There are many machine learning techniques that are as follows:

1. Machine learning (Supervised & Unsupervised Learning)
2. Inductive Deductive Learning & reinforcement learning
3. Deductive Transductive Learning algorithm
4. Multi task and active learning
5. Transfer and Online learning

Mostly the supervised and unsupervised technique is used in our daily lives. Some other learning algorithm are being used for different purposes and have different perspective. Deep learning and its other part is also a machine learning artificial intelligence neural network part. Artificial algorithm is sub domain of other domain and its work together to perform task. The classification of image processing using deep learning algorithm either the person is male and female, face recognition and image labeler. Artificial neural network can train large set of images datasets and its easy method to identify images. (Machine Learning Mastery, 2021)

# Domain Description

Mobile apps are one of the fastest growing segments in the downloadable apps market. Of all the markets, we choose the Google Play Store because of its growing popularity and its recent rapid growth. One of the main reasons for this popularity is that about 81% of applications are free. With titan companies like Samsung, LG, Motorola and HTC all launching Android phones, it soon became the most popular mobile operating system, reaching more than one billion active users by 2014.

As Android grew, so did Google's control over the operating system. Initially, manufacturing partners were able to customize most of the platform to their liking; however, Google has added more mandatory services and conditions each year, ensuring benefits for its own app package.

Google Play has grown tremendously over the last decade, reaching $ 38.6 billion by 2020. By 2020, more than 2.9 million apps were available in stores, downloaded 108 billion times.

Developers and consumers play a critical role in determining how industry impacts affect future technologies. However, the lack of a clear understanding of the inner workings and functionality of the popular software industry affects developers and users alike. In this article, we will try to explain the strengths of the Google Play Store and how we can use various configuration files for prediction purposes.

In this article, I provide a longitudinal study of the metadata for Google Play applications, which provides unique information that is not available with a standard approach to take a single application. Use the feature longitudinal analysis of the application to determine whether or not an application will be successful. Our analysis is divided into four phases: data extraction, data purification, data visualization, and application of different models. I will first collect data from the Kaggle website. In the next step I will try to delete the data from the dataset to reduce the error rate. Once the dataset is complete, we try to analyse the dataset using different maps and replace the unnecessary things in the dataset. In the last step, I will use different supervise and unsupervised algorithms on the data set to find out which offers the highest percentage accuracy. Finally, I will present the results of the analysis to provide a clear picture of the relationship between interests. The relevance and future directions of research are discussed in detail in the last chapter, Conclusions and future papers.

# Problems Definition

## Scenario 1

App analysis will be used to ﬁnd whether an app will be successful or not?

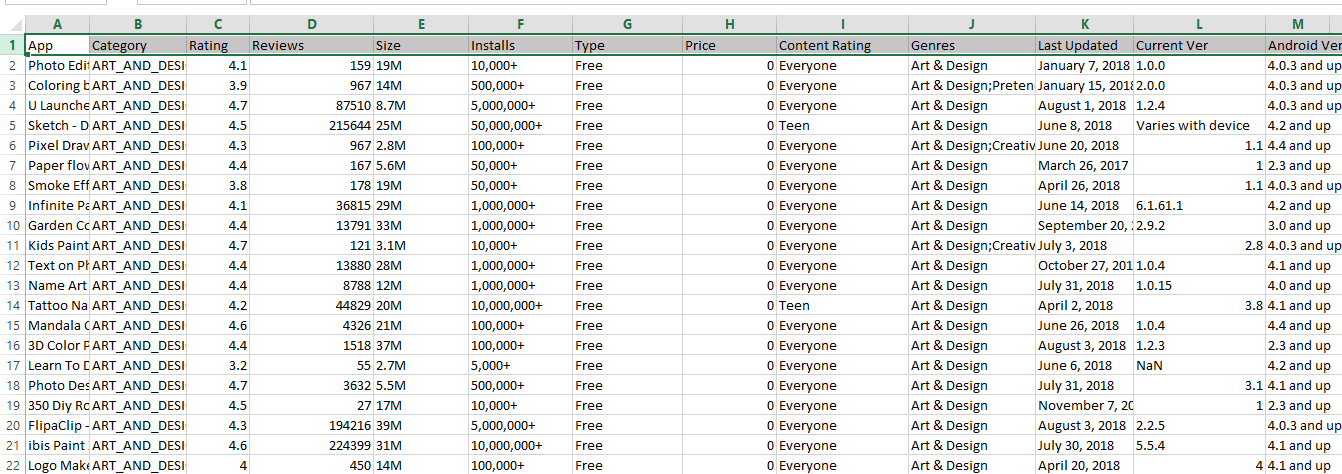
# Dataset Description

**Oxford Dictionary** defines a dataset as **“a collection of data that is treated as a single unit by a computer”.** This means that a dataset contains a lot of different data but can be used to train algorithms for the purpose of finding predictable patterns throughout the dataset.

In my case I have download the dataset from the [Kaggle](https://www.kaggle.com/lava18/google-play-store-apps/code) this is a web scrapping repository where [Kaggle](https://www.kaggle.com/lava18/google-play-store-apps/code) user contribute such kind of data. My Play Store apps dataset has total of 10841 rows and 13 columns.

The columns of the dataset are as follows:

1. App (Name)
2. Category (App)
3. Rating (App)
4. Reviews (User)
5. Size (App)
6. Installs (App)
7. Type (Free/Paid)
8. Price (App)
9. Content Rating (Everyone/Teenager/Adult)
10. Genres (Detailed Category)
11. Last Updated (App)
12. Current Version (App)
13. Android Version (Support)



Sample Dataset

# Dataset Exploration (pre-processing and wrangling)

Most of the time, the data come with garbage/waste values, which need to be addressed before affecting performance. Trained models that predict outcome. Several steps are used to pre-process this data. Reprocessing is important into transitioning raw data into more desirable format. Undergoing the pre-processing process can help with completeness and compellability. For instance, you'll see if certain values were recorded or not. Also, you'll see how trustable the info is. It could also help with finding how consistent the values are. We need pre-processing because most real-world data are dirty. Data can be noisy i.e. the data can contain outliers or simply errors generally. Data can also be incomplete i.e. there can be some missing values.

In this Section, I will discuss more about Google Play Store Apps Based on the Given Information, using the notebook I have created to understand my dataset.

## Main Python libraries that I have used for this project.

* **Pandas**: The library is highly optimized for performance, with critical code paths written in python or C. It deal with DataFrame,time series data, reading and writing data between in-memory data structures and different file formats.
* **Scikit Learn**: This machine learning library for the Python programming language. It features various classification, regression and clustering algorithms including support vector machines. Also ,it can work with other libraries and packages like Numpy.
* **Graphviz:** Graphviz is an open-source python module that is used to create graph objects which can be completed using different nodes and edges. It is based on the DOT language of the Graphviz software and in python it allows us to download the source code of the graph in DOT language.
* **NumPy:** Is a library for the Python programming language, adding support for large, multi-dimensional arrays and matrices, along with a large collection of high-level mathematical functions to operate on these arrays.
* **Matplotlib:** Matplotlib is a comprehensive library for creating static, animated, and interactive visualizations in Python. Matplotlib makes easy things easy and hard things possible.
* **Seaborn:** Seaborn is a Python data visualization library based on matplotlib. It provides a high-level interface for drawing attractive and informative statistical graphics.

# Analysis and Results

# Conclusions

# References

# Appendixes