PROJECT REPORT

CS 5990: AI in Interactive Digital Entertainment

CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA

Department of Computer Science

Submitted As Final Project Report

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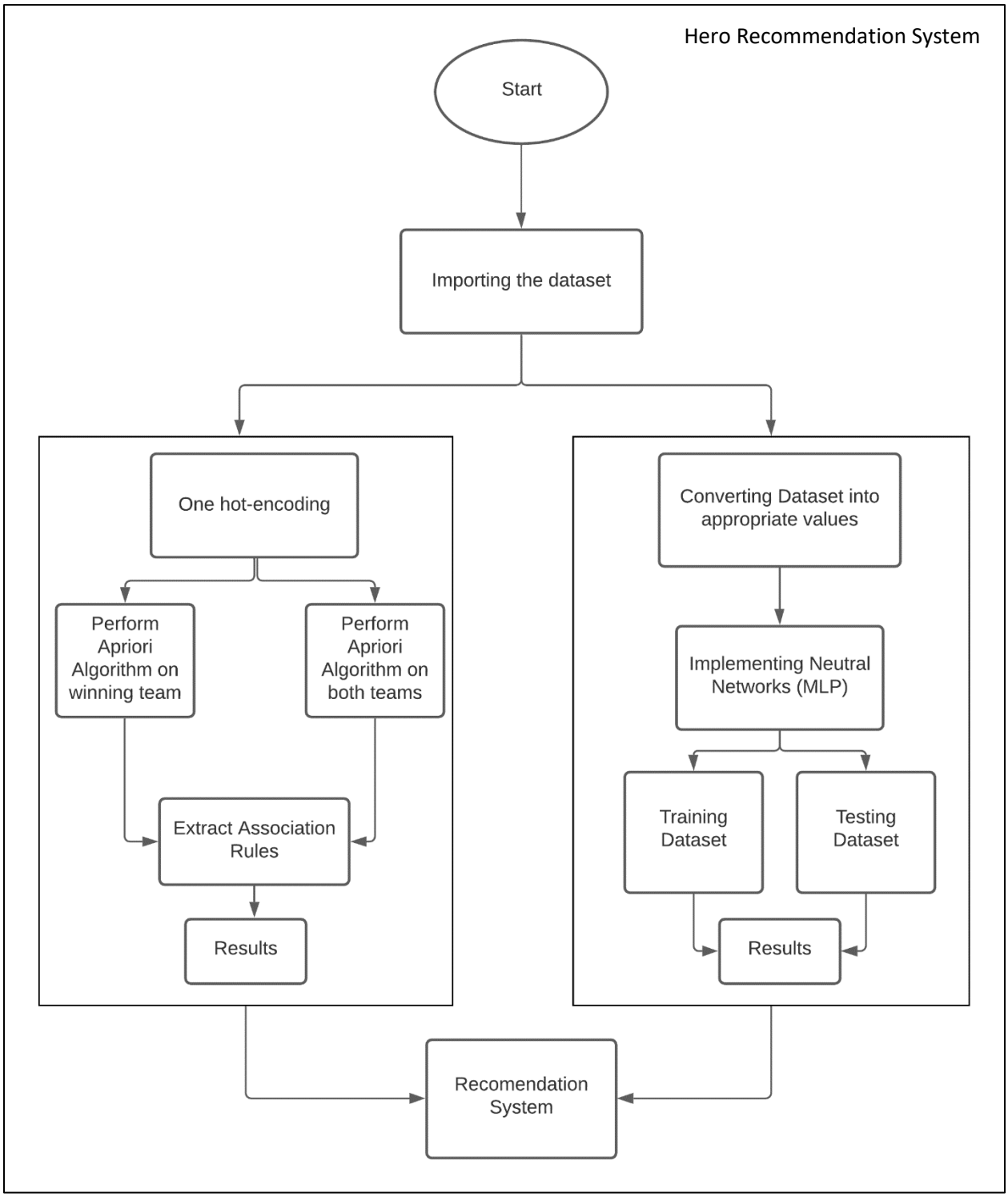
System Architecture



Executing the project

- The project can be downloaded from the following github repository:

  https://github.com/Rahul2K20/DOTA-2-Hero-Recommendation-System

- Extract the zip file to reveal the content of the project
- Run Hero_Recommendation_System.ipynb in jupyter notebook
- The results of the project are cached. To verify, the kernel can be restarted. Training the model can take up to 30 minutes or more depending on the CPU.

Software and Libraries Required

- Software: Jupyter notebook
- Libraries: Pandas, numpy, matplotlib mlxtend

Inputs needed for the project

- Datasets:
  dota2_test1, dota2_train
- Python files:
  activation.py, cost_function.py, initialization_of_parameters.py, optimizer.py, prediction.py, propogation.py to run the neural network module. The files were acquired from a free-to-use (Licensed) github repository. We modified the files to fit our requirements for the project. (The credit is given to the original author)

Results

- We were able to successfully replicate most of the paper: Manipulating the dataset, applying the apriori algorithm, applying the Neural Network
- We received roughly the same number of association rules as the paper.
- However, the accuracy of the neural network (61%) was not able to meet the standards of the paper (88.63%)
- We were unable to complete the project's final phase, which involved obtaining the win rate percentage.