Forecasting Individual Item Price Changes in Runescape using a Neural Network

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Abstract

Here goes the abstract, a short description of the project.

1 Runescape

1.1 The Game

Runescape is a browser-based Massive Multiplayer Online Role Playing Game (MMORPG). Gameplay mostly revolves around the player defeating monsters and enemies to level up and acquire weapons and/or gold pieces (gp). Some enemies award the player with valuable weapons which the user can sell or use for themselves.

1.2 The Items

Items in Runescape have various uses and have an extremely large range in value. Some of the most valuable items cost 2147 million gp. Most items are used to train secondary, non-combat skills such as potion-making (Herblore). Potions have ingredients, which make a direct relationship between two items. This distinct relationship between items makes this class of item particularly interesting as price changes in the ingredient may indicate an upcoming price change in the potion.

1.3 Grand Exchange

The game contains a central item exchange called the Grand Exchange (GE). At the GE, players can buy and sell items through limit orders at zero commission. A zero-commission exchange is particularly interesting to forecasting because a model need only beat the average slightly in order to be profitable.