

Project 5 Proposals

Proposal 1

Sneaker resell market was estimated to be a \$2 billion market in 2019. It is projected to grow into a \$6 billion market by 2025. In the early days of resell market, the resell price can vary depending on the geographic location and the platforms they use (eBay, craigslist, consignment stores). In 2016, StockX, the online resell marketplace began to track and report the resell price of each sneaker model that's sold on its website and other platforms such as eBay. It now serves as the centralized place to check how much a particular sneaker is worth at the moment.

Like many sneakerheads, I want to maximize the return on my collection and pay the lowest price on some coveted sneakers. Using the sale history from StockX, I like to do one week forecast, one month forecast and one year forecast on the resell price of a particular sneaker and use the information to determine when to buy or sell your sneaker collection.

The following data will be scraped from StockX website for analysis.

| Variables | Type | Description |
|------------------|-------------|--|
| Sneaker Model | string | Sneaker's brand and model |
| Colorway | String | The color combination of sneaker |
| Size | float | Sneaker Size |
| Date | Date time | the date sneaker is sold |
| Highest Price | Int | The highest price someone paid for the sneaker |
| Lowest Price | int | The lowest price someone paid for the sneaker |
| # of sales | int | Total number of sales for each sneaker model |
| Price | int | Resell price of sneaker |
| Price premium | Int | the amount over the original retail price |
| Retail price | Int | The original retail price |
| Release Date | Date time | The date the sneaker is released |

Possible Tools/Models

Webscrapping (BeautifulSoup, Selenium)

Time series analysis (ARIMA, Prophet)

Proposal 2

Last summer, I built an electric inflatable float for blind kids to ride around in the pool and the lake. But it lacks the optimal obstacle detection system that can alert the kids what's in front of them. The ultrasonic sensor was not very reliable and prone to water damage. Thus, I want to improve the system by implementing computer vision. Below is the picture of the inflatable.



My goal for MVP is to build an object detector that can detect flamingo inflatables in a video clip.

Possible tools

TensorFlow
OpenCV
Keras

Tentative Workflow

- Gather data: take photos of the flamingo inflatable with other objects. Also collect google images of the inflatable.
- Label data: draw bounding box around the inflatable.
- Create TFRecords (for TensorFlow): TFRecords input file for training.
- Train the model.
- Test the model.