KNN Classification for H&M Product Recommendation

Joshua Kobuskie

Problem Statement

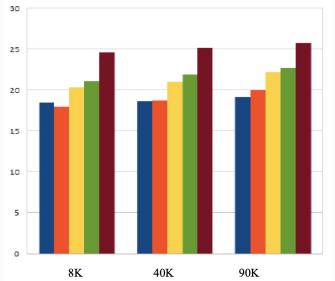
- H&M Personalized Fashion Recommendations challenge
- Real World Applications
  - Better advertising
  - Increased sales
  - Decreased returns
- Inputs:
  - articles.csv
  - customers.csv
  - Transactions_train.csv
- Output:
  - submit.csv

Technical Challenges

- Difficult to advertise accurately and effectively
- Trying to predict the future
- Time and Memory constraints
- Reliance on previous transaction history and demographic information as an indication of future purchases

Related Works

- Professor Parinita J. Chate
- The Use of Machine Learning Algorithms in Recommender Systems: A Systematic Review
- KNN Classification



Bar chart 1: Precision Comparison

Approach and Results

- KNN Classification Learner
- Predictions for customers with no transactional history
- Evaluated using purchase history from previous time periods
- 70% accuracy achieved
- Trade off:
  - Speed vs. Accuracy

Broader Impact

Impacts

- Build a stronger customer base
- Reduce returns

Opportunities for others

- Exhibit the strength of KNN in product recommendation systems

Limitations

Limitations:

- Speed
- Computational Costs

Improvements

- Data/Model complexity
- Database