Numerai Competition

Problem statement

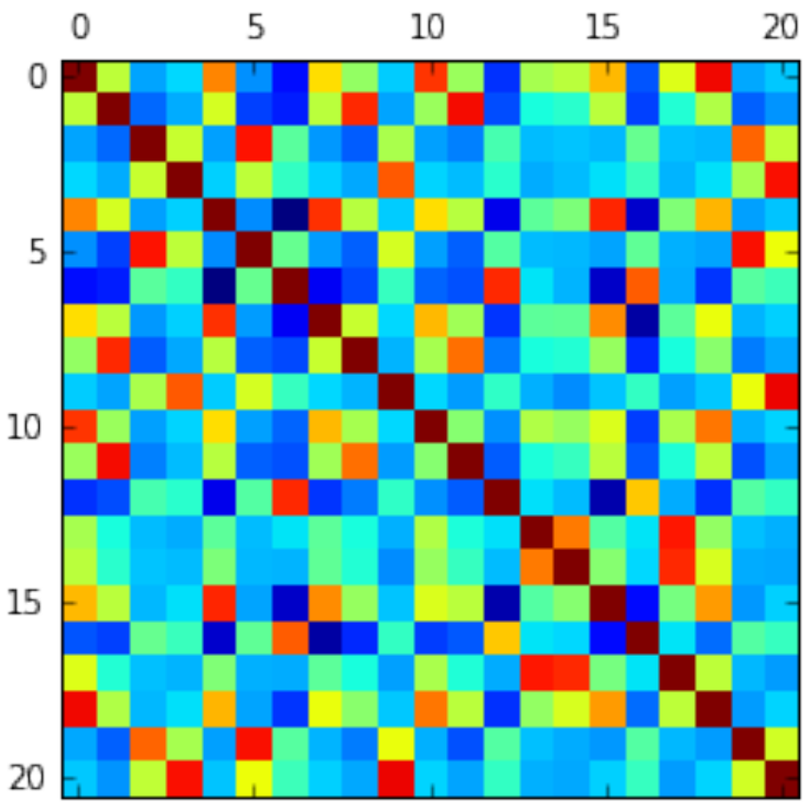
- Perfectly balanced binary classification
- Anonymized 21 features
- Data changes every week

Data leakage

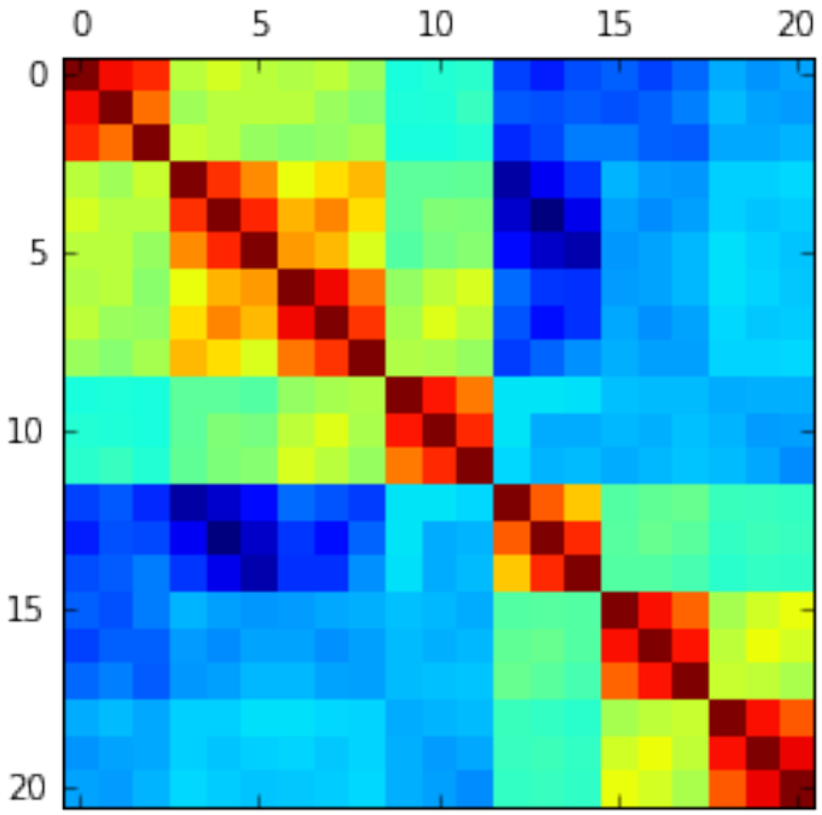
- Allegedly time series
- Target variable depends on changes between each point (think of returns)
- Approximate reconstruction of true order via nearest neighbourhood analysis
- Top10 via logistic regression on 21 original features + 21 features from nearest neighbour

Hardcore EDA

Correlation matrix

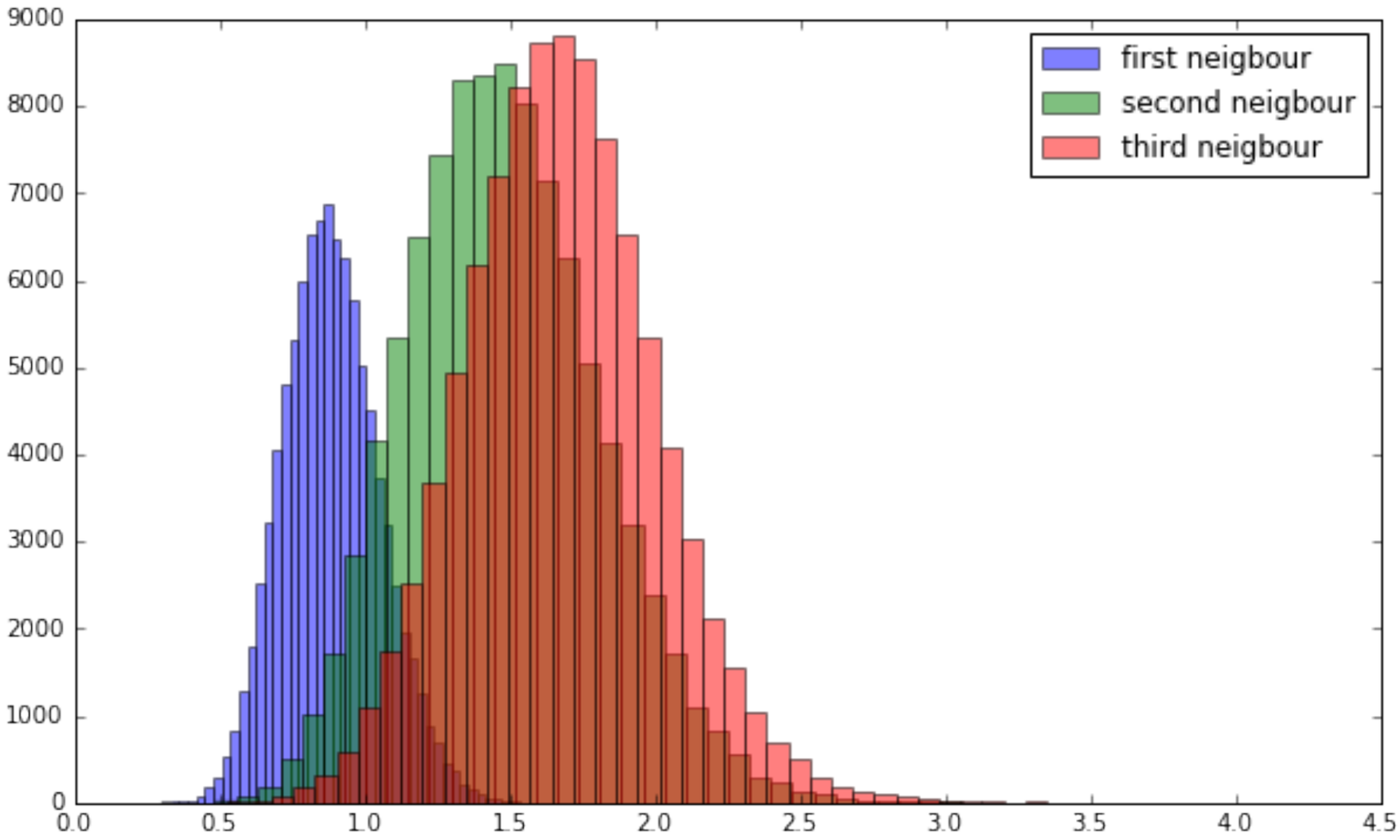


Sorted correlation matrix



Hardcore EDA

Distribution of distances to the first 3 neighbors in previous weeks data



Hardcore EDA

```
#inds - indices of nearest neighbours
ff_groups = [[ 1,  4, 17,  6, 20,  0, 19],  [5, 15,  9, 12, 14, 18, 11],  [7,  8, 10,
        13, 16,  3,  2]]
mm = np.mean(np.abs(train[true_order].values - train_old[true_order].values[inds[:,0]]),axis=0)

plt.plot(sorted(mm),'.',markersize=20)
```

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[<matplotlib.lines.Line2D at 0x7ff1f189df50>]
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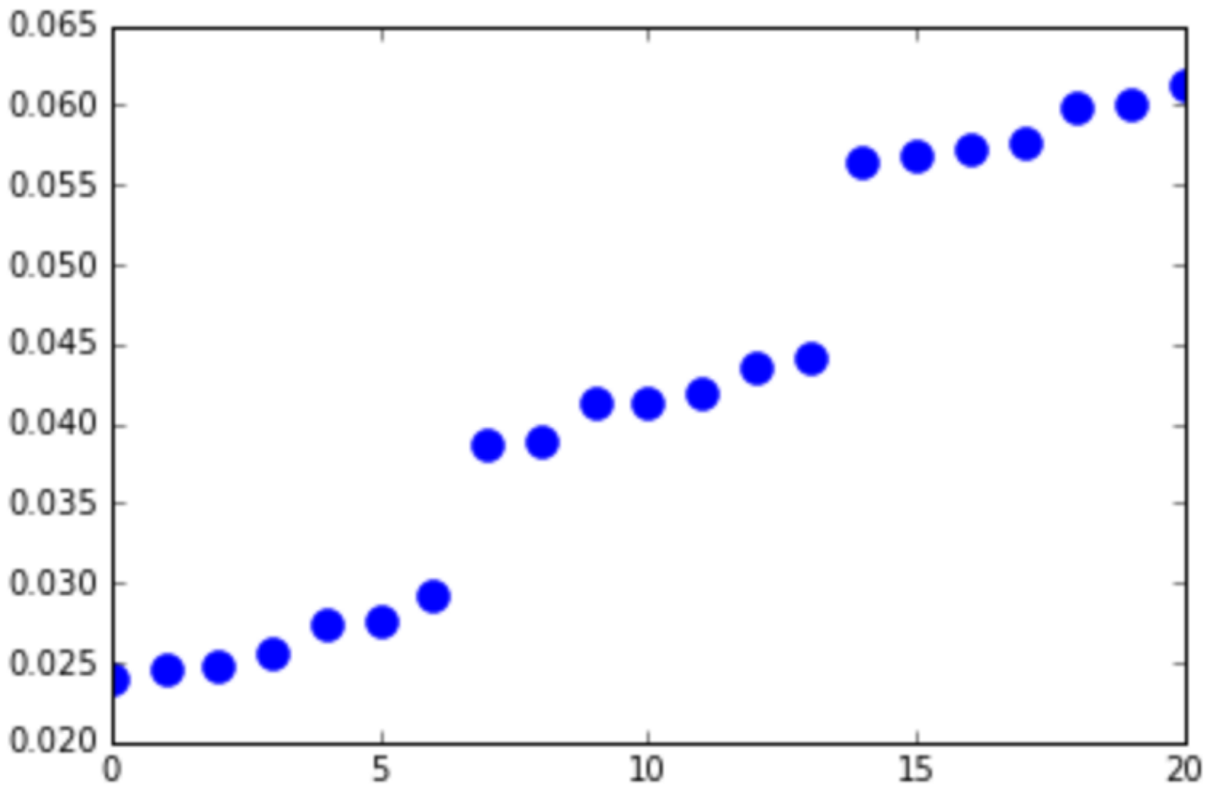

New data is a lie

Thank you!