Team - 5
HackerCoin

-Unleashing the hacker within

Since inception

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Problem Statement

- To find currency token whose price is determined by a basket comprising of various fiat and crypto currencies.
- Currency should be free of government intervention(like crypto) and less volatile

HIGHLIGHTS

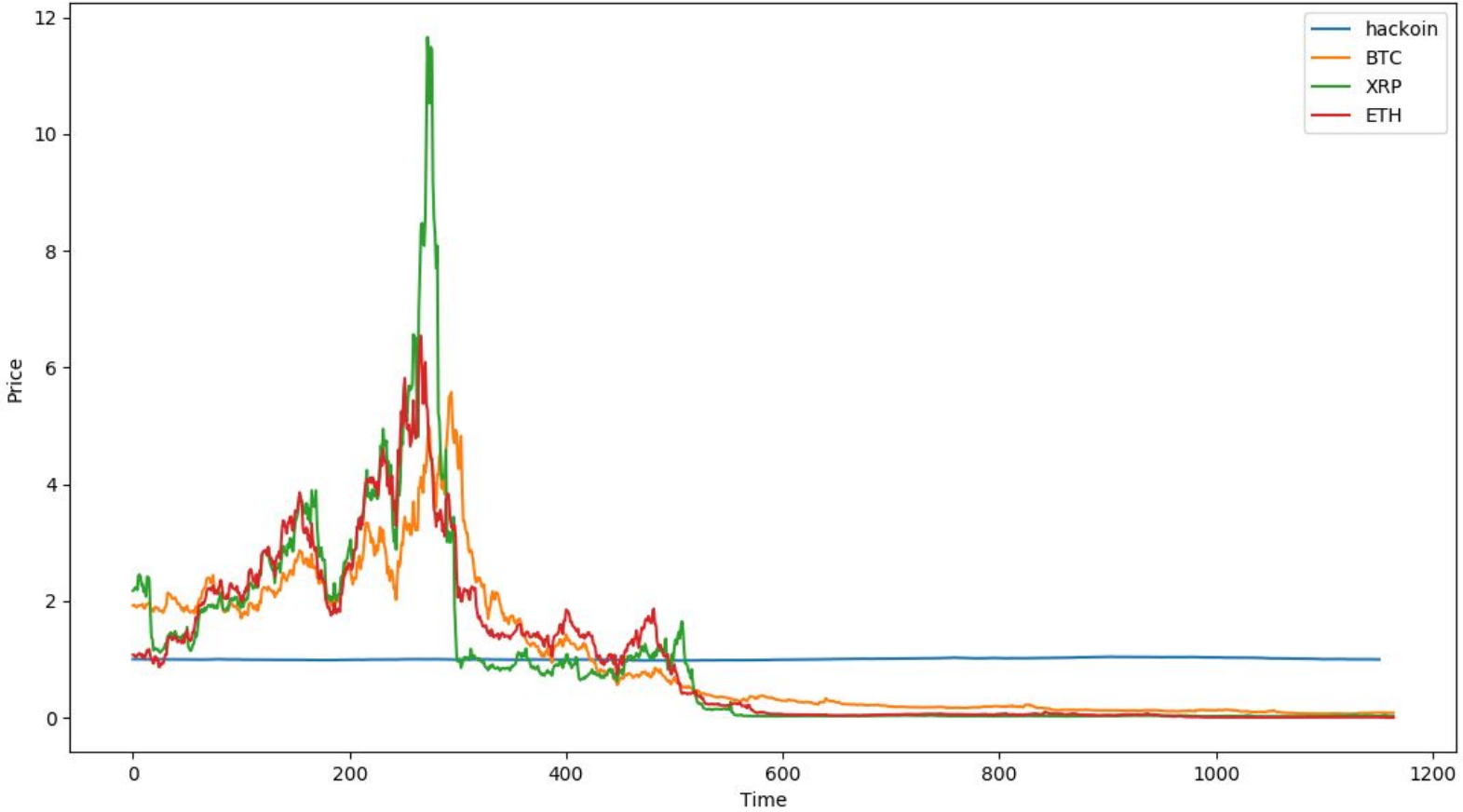
- Price Index Formulation
- 10 currencies - 7 Fiat, 3 Crypto from Aug’15
- Dynamic Volatility and Return calculation
- Index price in USD (USD not used in basket!!)

APPROACHES

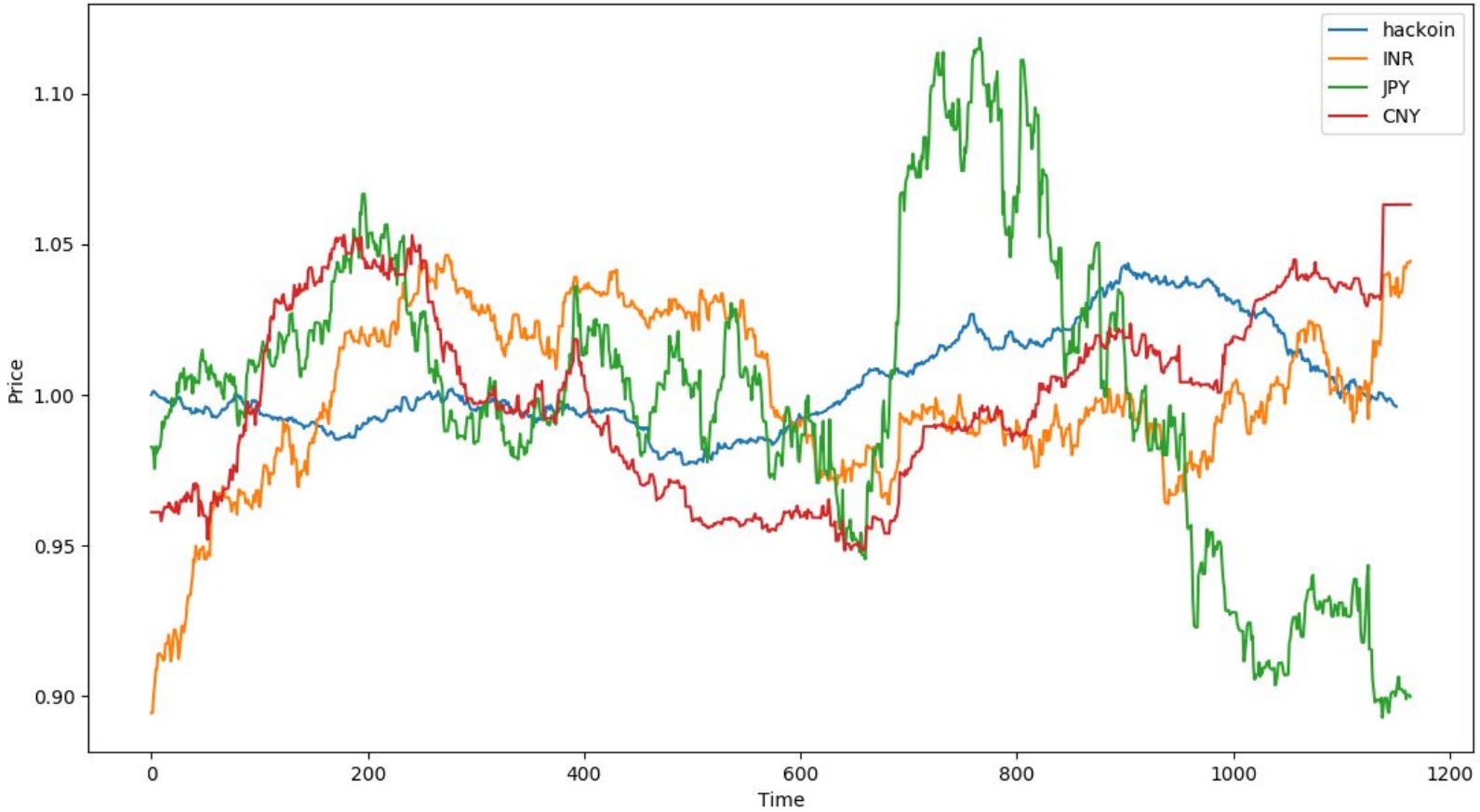
Convex Optimisation

- Minimize the volatility
- Weights kept positive
- Weights are dynamic for every date

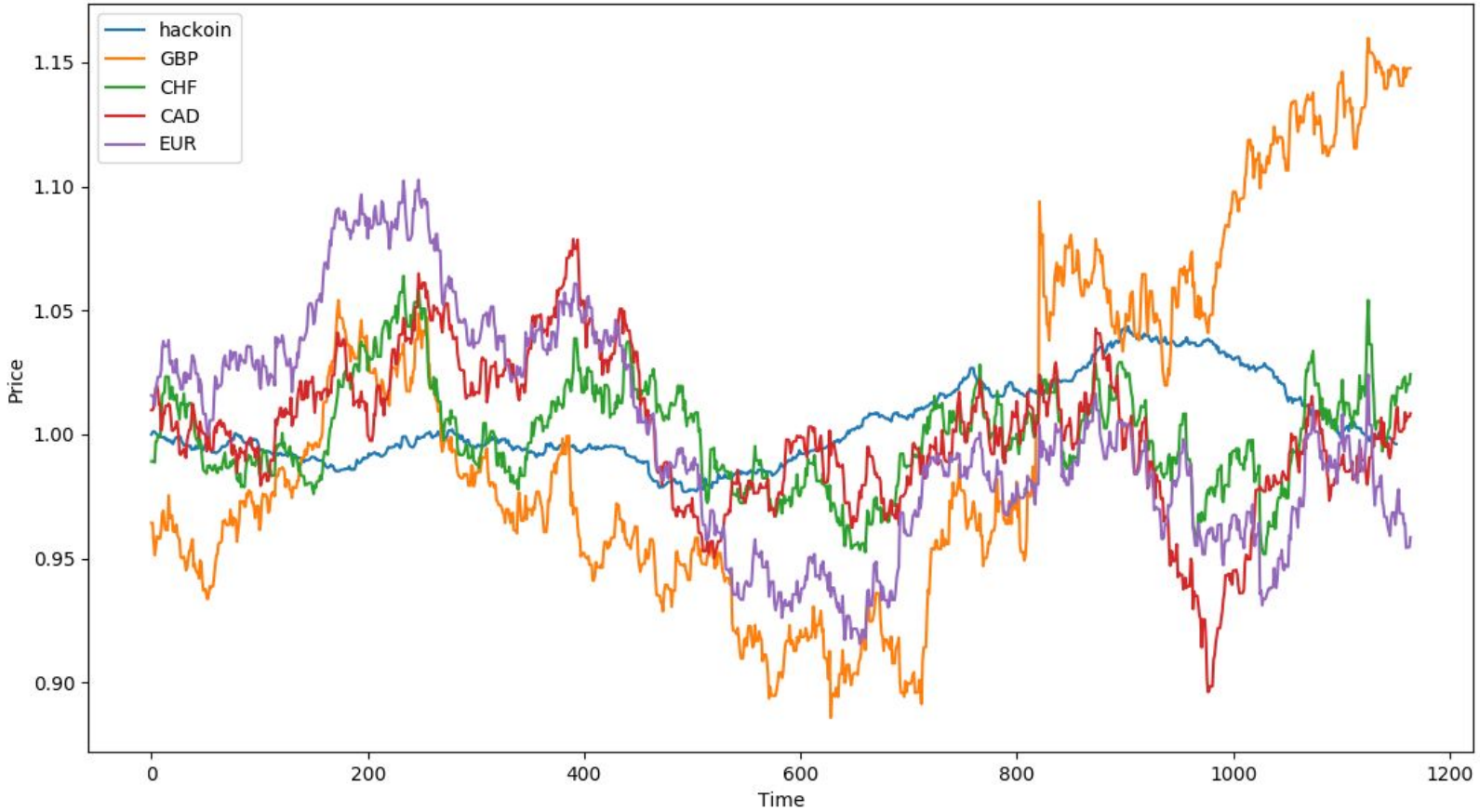
Visual comparison of price variance of Hackoin(blue) vs Crypto Currencies



Visual comparision of price variance of Hackoin(blue) vs Fiat Currencies Set 1



Visual comparision of price variance of Hackoin(blue) vs Fiat Currencies Set 2



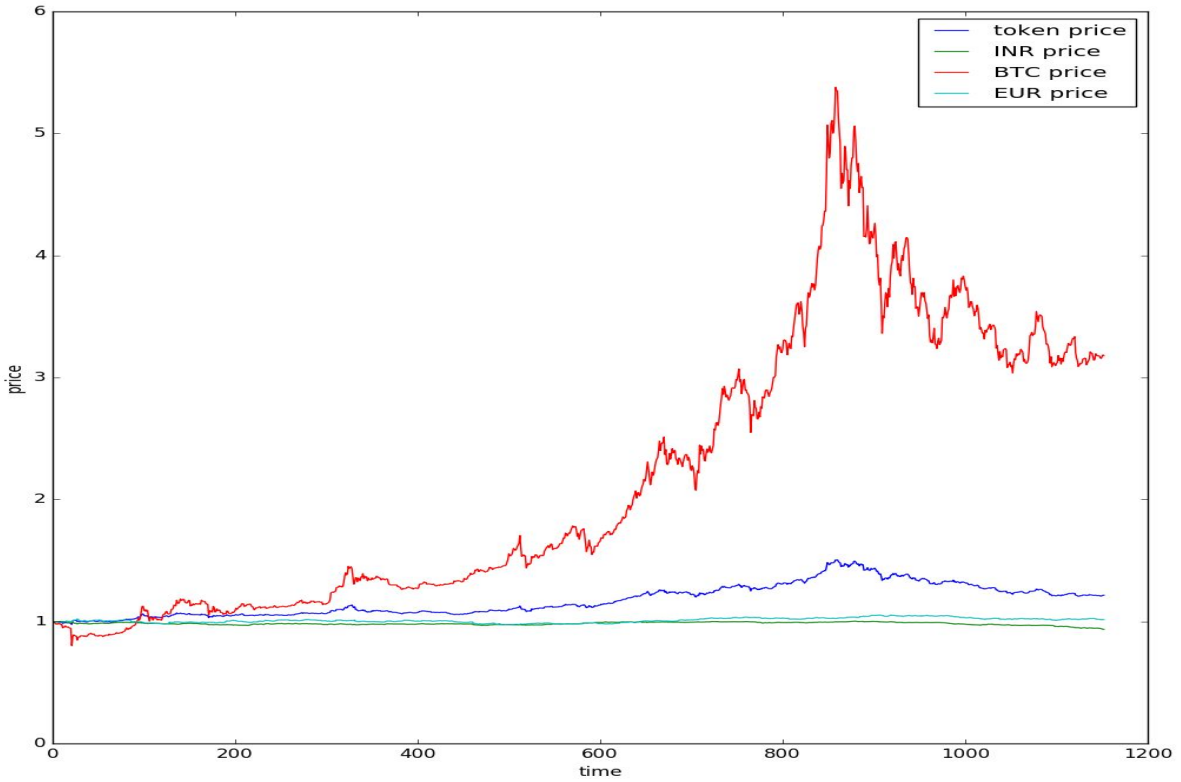
Neural Network

- Implemented a simple fully connected neural network
- Network makes predictions based on previous days returns of basket currencies
- Carefully designed an objective function which promoted low volatility and high returns

Neural Network

- Tuned hyperparameters of our model to produce a stable weight predictor
- Used RMS Prop Optimizer to minimize our objective function

Visual comparision of price variance of Hackoin(blue) compared to BTC(red), INR(green) and EUR(cyan)



Technologies Used

Python

- numpy, pandas
- Cvxopt
- Tensorflow
- matplotlib

Solidity

- Remix

Areas of improvement

- Other things like commodities, options, market indices etc. can also be included in our basket
- Can implement LSTMs to take into account historic data and past weight assignment
- Fine-tune our objective function to push maximum returns

Link to code and beautiful visuals

https://github.com/sagarchand9/HackerCoin

THANK YOU


Thank you
Dora
Hack
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