# VICTION

Viction.io

**Abstract:**

Nowadays, cryptocurrency forecasting is generally considered as one of the most challenging time-series prediction problems due to the large number of unpredictable factors involved and the significant volatility of cryptocurrencies' prices, resulting in complicated temporal dependencies

Over the last years, deep learning methodologies were applied on time-series predictions, focusing on popular real-world application domains such as the cryptocurrency market. Most of these models exploit advanced deep learning techniques and special architectural designs based on convolutional and long short-term memory (LSTM) layers

## About Viction

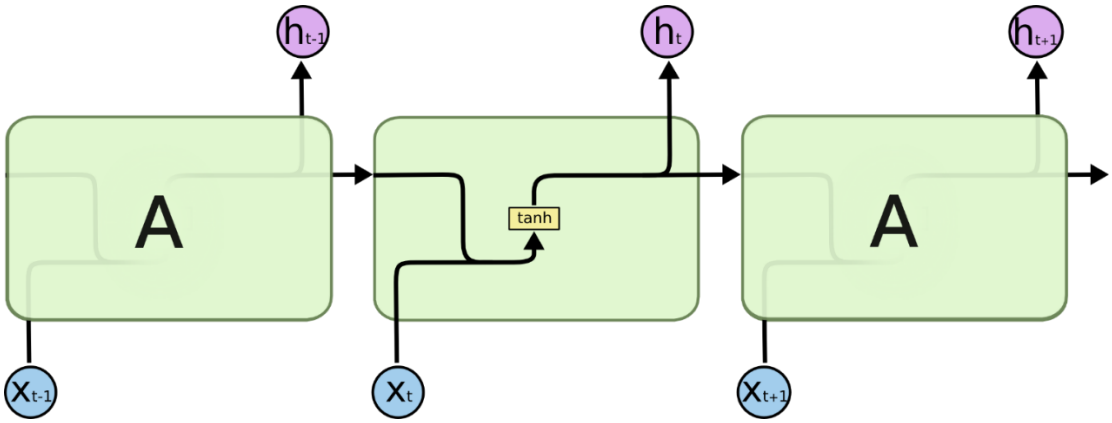
Viction is specialized in machine learning predictions and crypto… We provide series of tools for crypto trading and investing and a console for traders and investors to check the market effectively.

## What is an LSTM?

Long Short Term Memory networks – usually just called "LSTMs" – are a special kind of RNN (Recurrent Neural Network), capable of learning long-term dependencies. They were introduced by Hochreiter & Schmidhuber (1997), and were refined and popularized by many people in following work.[1] They work tremendously well on a large variety of problems, and are now widely used.

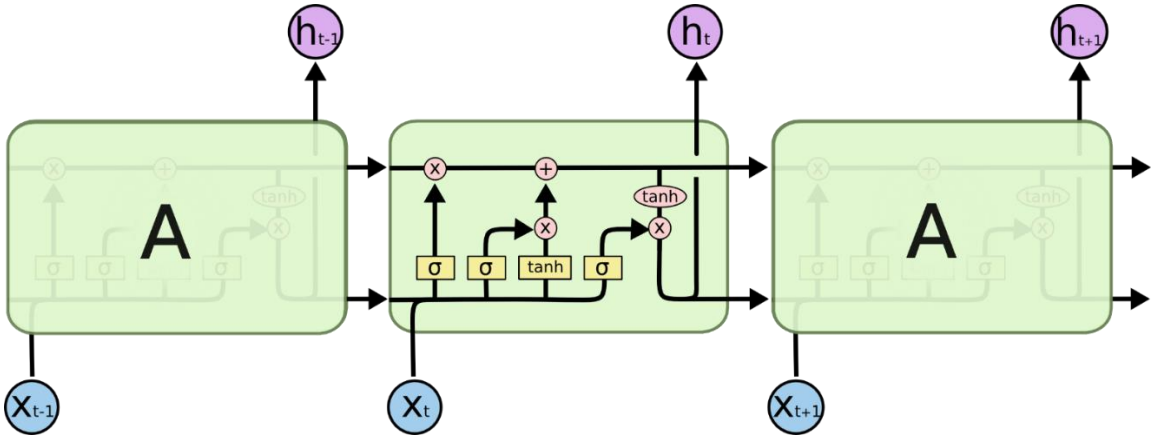
LSTMs are explicitly designed to avoid the long-term dependency problem. Remembering information for long periods of time is practically their default behavior, not something they struggle to learn.

All recurrent neural networks have the form of a chain of repeating modules of neural network. In standard RNNs, this repeating module will have a very simple structure, such as a single tanh layer.




**The repeating module in a standard RNN contains a single layer.**

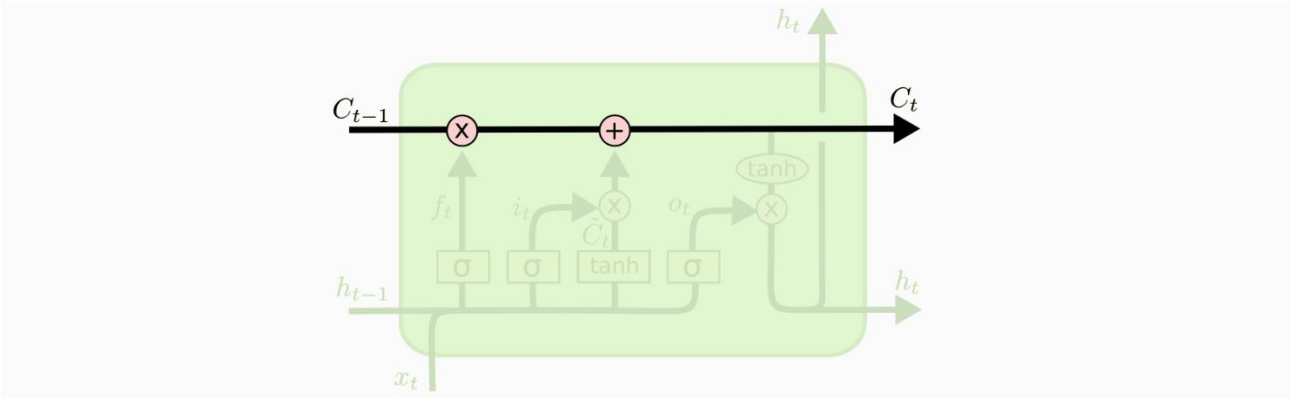
LSTMs also have this chain like structure, but the repeating module has a different structure. Instead of having a single neural network layer, there are four, interacting in a very special way.




**The repeating module in an LSTM contains four interacting layers.**

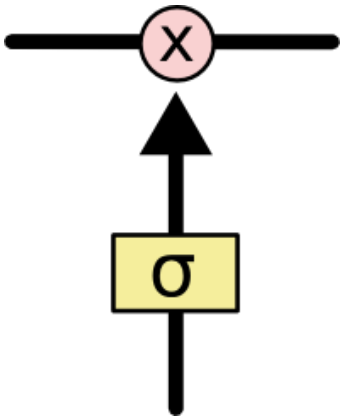
The key to LSTMs is the cell state, the horizontal line running through the top of the diagram.

The cell state is kind of like a conveyor belt. It runs straight down the entire chain, with only some minor linear interactions. It's very easy for information to just flow along it unchanged.




The LSTM does have the ability to remove or add information to the cell state, carefully regulated by structures called gates.

Gates are a way to optionally let information through. They are composed out of a sigmoid neural net layer and a pointwise multiplication operation.




The sigmoid layer outputs numbers between zero and one, describing how much of each component should be let through. A value of zero means “let nothing through,” while a value of one means “let everything through!”

An LSTM has three of these gates, to protect and control the cell state.

**Data collection process:**
Wide range of bitcoin related data is being captured in near real time from different sources. Whole data collection process has been streamline and orchestrated through airflow. Airflow has an intuitive UI to visualize running tasks, failed tasks, log, stop and start any tasks

Some data collection processes are running per minute whereas few are spaced up to 2 hours depending on type of data and limitation of apis.

Below are the data collection processes running in airflow. Frequency of each running tasks

**Cryptometer.io**
Data points being collected:
Trends indicator
Current Trend of the market. 0-100 Score, higher is better (bullish)
Merged buy/sell volume
Long/shorts Data
Bitmex liquidation

**Bybit**
Market_get_orderbook
Datapoints:- timestamp, symbol, price, size, side.

**Binance futures**
Stats
Trade
Orderbook
Settlements

**Bitmex**
Stats
Trade
Orderbook
Settlements

**Blockchain.com**
Datapoints:- Time, Amount, Hash

**Coindesk.com**
Datapoints:- for live_tweets.csv(Time, Sentiment, value_normalized)

**Coinmarketcap.com**
Datapoints:- read_time, percent_change_1h, volume_24h, percent_change_24h, percent_change_7d, market_cap, altcoins_percent_change_1h, Altcoins_percent_change_24h.

Api for Ohlc data :
Datapoints:- epoch, create_time, open, high, low, close, volume.
Time field(create_time)

**Google Trend** used on scale of 1 to 100.

**Twitter**

**youtube**

**References:**


https://colah.github.io/posts/2015-08-Understanding-LSTMs/

https://www.fnfresearch.com/sample/cryptocurrency-market-by-type-bitcoin-ethereum-ripple-litecoin-640

Hochreiter & Schmidhuber (1997)
http://www.bioinf.jku.at/publications/older/2604.pdf