A take profit ensures you exit with your desired profit without emotions or hesitation. It's the opposite of stop loss, which limits downside.

Backtesting a daily DNN-Based strategy:

Backtesting a Daily Deep Neural Network (DNN) -Based Strategy involves ~~backtesting~~ evaluating how well your trading model, built using a DNN, would have performed on historical data. Here is a step-by-step overview.

Step-by-Step Guide:

(1) Data Collection:

* Source: Use data from reliable sources like Yahoo Finance, Alpha Vantage, Quandl etc.
* Data Needed: Daily OHLCV (Open, High, Low, Close, Volume) data.
* Optional Features: Technical Indicators (MACD, RSI), sentiment data etc.

(2) Data Preprocessing:

* Normalize or scale input features.
* Handle missing values or outliers.
* Convert to supervised learning format. (eg). Use a window of 10 days data to predict the next day's direction / return.

(3) DNN Model Design:

* Inputs: Previous N days of features (windowed input)
* Architecture:
* Input layer: N x F features (where N is window size, F is number of features).

* Hidden Layer :- 2-4 dense layers (ReLU, dropout).
* Output :-
  Classification : Predict up/down or buy/sell.
  Regression : Predict next-day return or price.
* Loss Function : Cross-entrophy (classification) or MSE (regression).
* Optimizer : Adam usually works well.

(4) Training the Model :
* Use a rolling or expanding window to avoid lookahead bias.
* Use early stopping and cross-validation.
* Split data chronologically : train (70%), validate (15%) test (15%)

(5) Backtesting the Strategy :
Simulate daily trades based on model predictions.

Key elements :-
The key elements to be considered are :
→ Starting capital.
→ Transaction costs / slippage.
→ Position sizing rules.
→ Portfolio rebalancing frequency.
→ Long/short or long-only strategy.

Performance Metrics :
The performance is checked by evaluating the below metrics :
→ Cumulative Return.

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→ Sharpe Ratio
→ Max drawdown
→ Win/loss ratio
→ Hit rate (classification accuracy)

(6) Walk Forward Analysis:
→ Train the model on a rolling window (eg. last 2years), test on the next month.
→ Continue forward, updating the model periodically.

(7) Evaluation and Comparison:
Compare DNN strategy with.
* Buy and hold model.
* Moving Average Crossover.
* Other ML models (Random Forest, XGBoost).

This is how backtesting a daily DNN based strategy is executed.