**Trading Algorithm Project**

**Strategy Type**: High frequency trading strategy

**Time frame**: 30 minutes

**Description**: When the price moves 2 standard deviations below or above its average and the pair is oversold or overbought and there is a current trend we buy and sell respectively until the price returns to its average or it drops below a percentage of the original price

**Metrics**:

* Cumulative Return
* Annualised Return
* Maximum Drawdown (largest peak-to-trough decline in the portfolio’s value)
* Volatility / sd
* Sharpe ratio ( (portfolio return – risk free rate) / sd of portfolio returns)
* Sortino ratio (better measures downside risk, is instead divided by sd of negative returns)

(higher ratio indicates better risk-adjusted returns)

* Winning rate
* Profit
* Average Trade return
* Average holding period
* Alpha (excess return of the strategy over a benchmark index, positive alpha indicates outperformance)
* Beta (measures the algorithm’s sensitivity to market movements, a beta of 1 indicates the strategy moves with the market, while a beta less than 2 indicates less volatility than the market)

**To do**:

* Integrate neural network
* Optimise parameters
* Evaluate performance on other pairs