Refined *no-code* **asset price modelers**

— apps for retail investors —

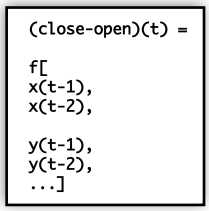
stocks / ETFs / larger cap crypto

MCarloRisk3D

risk analysis & price range forecasting

- **drift/diffusion** models via Monte Carlo
- estimate price ranges & probabilities over time
- extensive **backtesting** and model **validation** features
  - *for increased accuracy, no assumptions of (log-)normality are required*
- models based on daily **returns** & historical volatility *(not price levels)*
- fat tail / Black Swan modeling
- extensive **3D** graphics for understanding models
- detailed backtesting of mean and tail / extreme forecasts
- new **predictor-corrector** method to auto-adjust models to backtests
- individual assets and **portfolios** of assets
- basic model tuning & **stochastic volatility** models based on **Heston** formulation
- **Hurst** models / **fractional Brownian motion** models for long **memory** models
  - *trends versus mean reverting*
- **Fractional differencing** options for alternate long memory models
- **multi-correlation** analysis / principal components
  - *(eigenvectors of returns point cloud)* with graphics
- **replicating** portfolio models via multivariable regression on returns
  - *compute **beta** to SPY, beta to "any" over various time blocks*
  - *rolling window beta and **alpha** stability plots (beta and alpha over time)*
- compute probability over / under **strike** price from model (up to or at i-horizon)
- portfolio **optimization** to user settable risk/reward targets
- graphical comparisons to market **put/call** options
  - *prices, open interest, and price * open interest*
  - *show where options money is invested versus your model*

MVAR (Market Vector Auto Regression)



machine learning / 1 day ahead directional (bullish/bearish) forecasting

- based on daily historical data
- extensive **backtesting** features, manually tunable models
- basic ML models for low point counts
  - *customized **K Neighbors Classifier***
  - *feature-selected linear Least Angle Regression*
- statistical **significance** metrics computed to avoid **over-confidence** in results
- including a basic paper trading model
  - *to estimate gain/loss/Sharpe/Sortino during backtest*

available on iOS / macOS App Store(s); legacy version of MCarloRisk3D on Windows App Store

detailed white papers and case studies available on **ssrn.com —** extensive training guides also available

*links for the papers and training guides are in the **Help** tabs of each app*

info@diffent.com