`Stats:`

- Regression (OLS, GLM, Logistic, and etc.) • Time-series (ARIMA, GARCH, ECM) • Nonparametric Regression (Splines, Kernel, Locally Weighted Regression) • Data Exploration (Density Estimation, Normality Tests, Monte Carlo, Copulas • Data Cleaning and Reduction (Cluster Analysis and Stats Theory)

Math: • Calculus and Linear Algebra • Optimization (Taylor Series, Markov Processes) • ODE and PDE • Stochastic Calculus (Martingales, Brownian Motion, Stochastic Integrals, Stochastic Differential Equations, Ito's Lemma, Feynman-Kac) • Binomial Asset Pricing

Computer Science: • Stats Language (R, Python, SAS, Matlab, SPSS) • Programming Language (Python, C++, SQL) • Memory Management, Functions, Variables, Classes, Loops, If/Else Logic, Operators, Arrays, Reference and Pointers, best practices for writing code • Implementation of math and stats knowledge in a program • Machine Learning (Random Forest, Neural Networks, Decision Tree, Clustering, Dimensionality Reduction, Ensemble)

Finance: • Equity (Stock Analysis, Diversification, Technical Analysis, Finance Theory) • Fixed Income (Rate Curves, Pricing, Duration, TVM) • Derivatives (Black Scholes, BDT, Stochastic Volatility Model, Volatility Smiles and Theory) • Portfolio Optimization (CVaR, Efficient Frontier) • Arbitrage Theory and Statistical Arbitrage • Risk Management (VaR, Statistics, Credit Risk, Market Risk, Liquidity)