Quant Wing - Wall Street Club
BITS Goa 2022-23

A starter guide to Quantitative Finance

Quantitative Finance has 3 domains:

- **Algorithmic Trading**
- **Mathematical Finance**
- **Time Series Analysis**

Algorithmic Trading

Algorithmic Trading is a process in which trading strategies are automated such that no human intervention is required. This helps eliminate human emotions while trading.

Skills to Learn:

- **Python - Required for coding strategies. Libraries to learn are NumPy, Pandas, Matplotlib, SciPy**
- **Backtesting - For calculating historical performance of any trading strategy.**
- **Trading - Implementation of strategies using APIs (e.g. Zerodha Kite, FYERS).**

Resources:

- **Python for Financial Analysis and Algorithmic Trading by Jose Portilla (Udemy)**
- **Trade Hull (YouTube) -Live AlgoTrading in Indian markets.**
- **Automate the Boring Stuff (Book)**
- **Learn Python the Hard Way (Book)**

Mathematical Finance

Concerned with mathematical modelling of financial markets.
Important Concepts: No arbitrage theory, time value of money, futures and options and respective pricing models.

Resources:

- **Paul Wilmott Introduces Quantitative Finance [Chapter 1-6, 8(optional),22(optional)]**
- **Options, Futures and Other Derivatives by John C Hull**

Time Series Analysis

Understanding components of a financial time series and forecasting predictions using various time series prediction models. Machine Learning and Deep Learning models are useful for time series prediction.

Resources:

- **Practical Time Series Analysis by SUNY University (Coursera)**
- **Introduction to Time Series Forecasting in Python by Jason BrownLee**
- **Machine Learning (CS229(Andrew NG) - YouTube/Coursera)**
- **Deep Learning (CS231N - YouTube)**

Repository

This repository contains aforementioned resources and more [LINK]

Contact for queries:

Omkar Kulkarni [contact]

Quant Head, Wall Street Club, BITS Goa 2022-23