CUHK Campus Sharing

QUANT TRADING AND CRYPTO

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Background

Justin Cheng
Quant Trading (QT) Guru | Global QT Talent Super-Connector | Serial Entrepreneur

Overall 10+ year leadership experience:

- Quant Trading, Operation & Talent Management for Global/HK leading Firms
- Global Quant Trading/Tech Recruitment (Placing Talents in 20+ Major Cities)
- A Regular Trading & Entrepreneurial Related Panel Speaker
- Serial Entrepreneur: Alpha Finnovate, GTP Talent, Block Manic, Sofe Coffee

Topics

Get you up to speed on QT industry knowledge

01 Quantitative Trading Must-Knows

02 Quantitative Trading Landscape

03 Cryptocurrency Industry

04 Manoeuvre Your Way In Quantitative Trading

05 Q&A

Topic 1

Quantitative Trading Must-Knows

Definition of Quantitative Trading

Quantitative Trading consists of systematic trading strategies that use mathematical functions to automate trading models.

- Price and Volume are the two most common data inputs used in mathematical models.
- Quantitative Traders identifies a pattern /opportunity in the market, create a model of it using mathematics and develop a computer program that applies the model to historical market data.
- The Trading Model is backtested and optimized
- If favourable (ie. Profitable)results are achieved, the program can then be implemented in real-time markets with real capital

Discretionary Trading

Discretionary Trading is “decision-based” trading, where the human trader decides whether to buy/sell the financial instrument at any given point in time.

Systematic Trading

Systematic Trading is “rule-based” trading, where the pre-defined computer program decides whether to buy/sell the financial instrument at any given point in time.

Discretionary VS Systematic

In today's world, most trading firms are moving from discretionary trading to systematic trading. There are several reasons for this:

Removal of human emotions

Removal of reliance of ONE trader

The strategy can be backtested and hence statistically proven profitable

Improve risk management

Common Types of Quant Trading Strategies

Trend-Following

Based on the premise that an asset price moving strongly in a direction will continue in that direction until the price trend loses strength

Mean Reversion

Based on the premise that an asset price will revert to its “average” level

Market Making

Profits from the “bid-ask spread” (ie. The difference between the buying and selling price

Arbitrage

Profits from (usually tiny and short lived) differences in price between 2 identical assets traded on 2 or more different venues

Topic 2

Quantitative Trading Landscape

Locations of Quantitative Trading Firms

Europe

Amsterdam
Dublin
London

Americas

Boston
Chicago
Houston
Montreal
NewYork
SanFrancisco

Asia Pacific

Gurugram
Hong Kong
Mumbai
Singapore
Shanghai
Sydney

Asset Classes

Asset classes commonly traded in quantitative trading firms and growing asset classes

Equities (Stocks)	Warrants
Futures	Foreign Exchange (FX)
Options	Commodities
Digital Assets (Cryptocurrency)	Sports Betting

Topic 3

Cryptocurrency Industry

Crypto Basics

What is Cryptocurrency?

Cryptocurrency work as a peer-to-peer digital payment system

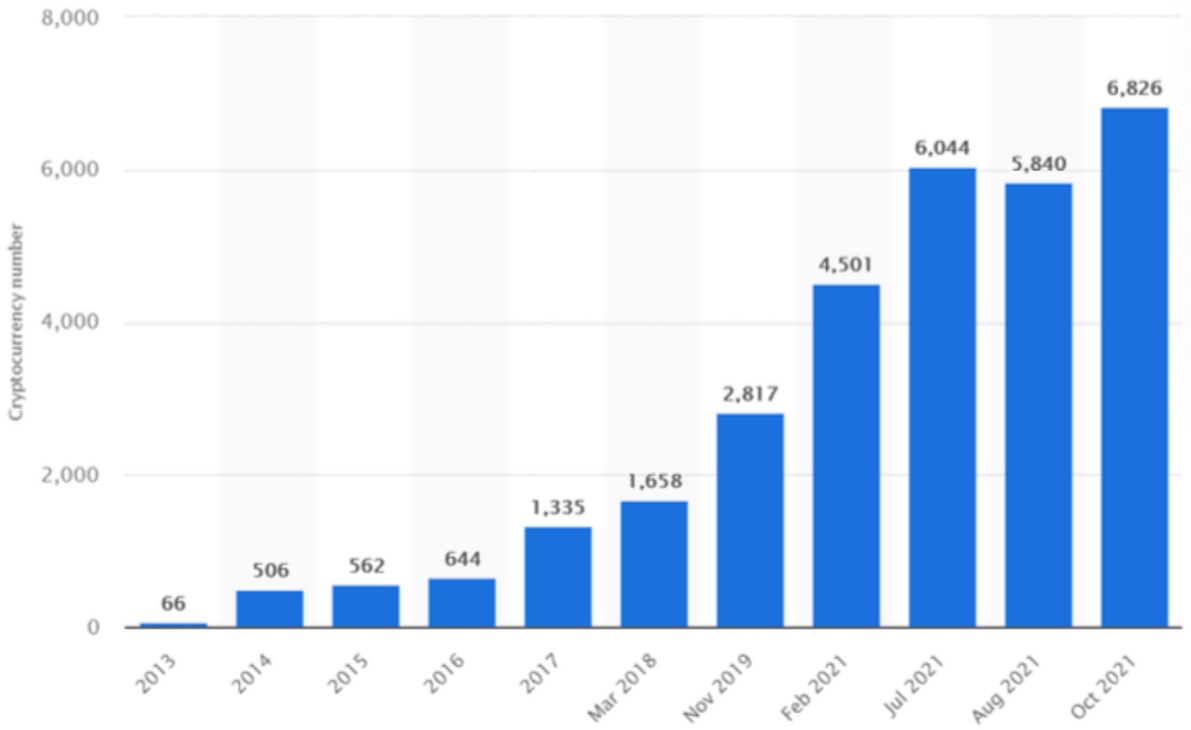
It allows people to make payments directly to each other without the need of intermediaries

Underlying Technology

The underlying technology behind cryptocurrencies is "Blockchain"

Each "block" is used to store an immutable transaction

Number of Cryptocurrencies



Fun Facts

As of today, there are 6000+ Cryptocurrencies AND 400 + Cryptocurrency Exchanges worldwide

The Cryptocurrency Market Capitalization reached an all time high of USD 2.6 Trillion in October 2021

Ways of Trading

Cryptocurrency can be traded in the form of Spot, Futures, Options and ETFS

The first Bitcoin ETF in the United States began trading on the New York Stock Exchange on 19th October 2021

NFT

Non Fungible Tokens

It is a digital asset that represents real-world objects like art, music, in-game items and videos.

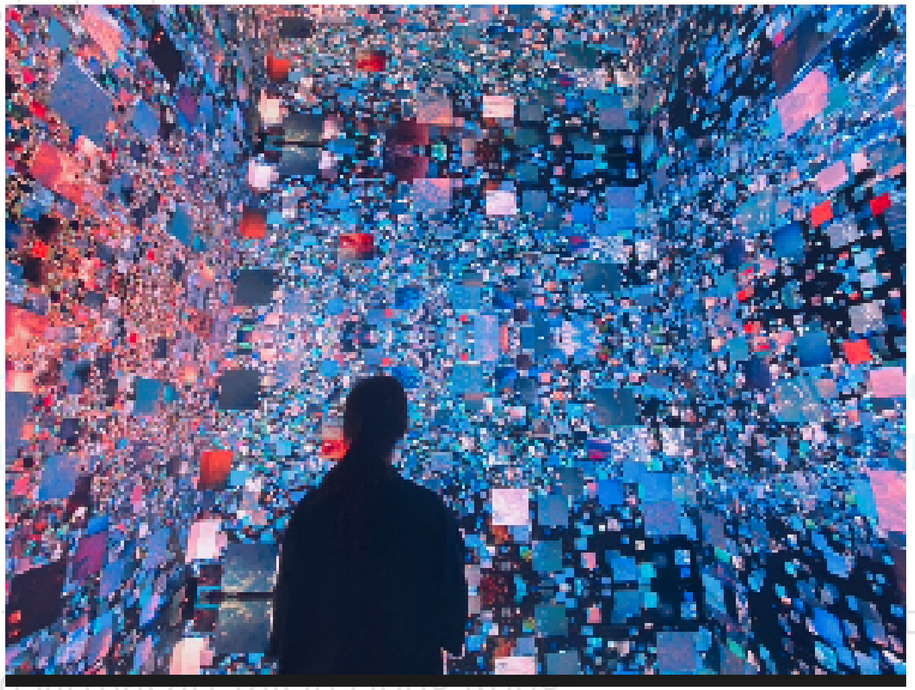
Essentially, NFTs are like physical collector's items, only digital. So instead of getting an actual painting to hang on the wall, the owner gets a digital file instead.

Token Features

Each NFT is unique and exist on a blockchain. The buyer also gets exclusive ownership rights. That is, each NFT can only have one owner at a time.

In October, "Digital Art Fair Asia" was held in Central as the first-ever physical and virtual art fair in Hong Kong!

Digital Art Fair Asia



GameFi

What is GameFi

It is the “financialization of video gaming"

GameFi is one of the hottest topics in the cryptocurrency industry right now!

Players are able to earn cryptocurrencies, whilst having fun playing the game! In GameFi, players can use cryptocurrencies to make purchases of NFTs (items) or complete certain tasks in the game to earn NFTs which they will “own”.

Whats Different?

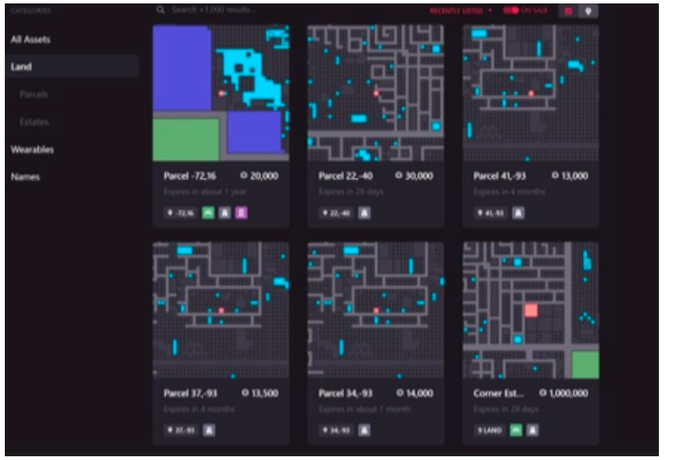
In traditional games, the host companies are the ones who hold “Full Control”.

When players purchase items in the game, they pay to the host company and they never really “own” the item.

These NFTs can then be traded with others in “digital marketplaces” for other NFTs or cryptocurrencies

GameFi Example: Decentraland

Decentraland is the first fully decentralized virtual world Crypto Game where players can buy and sell land, estates, avatar wearables and names using the cryptocurrency MANA!



Cryptocurrency Outlook & Future

2021

Has seen a breakthrough year for cryptocurrency with a massive increase in interest from both institutions and investors

Bitcoin price has reached all time high, Bitcoin ETF has been introduced on NYSE, major retailers are accepting cryptocurrencies as payment

3-5 Year

The cryptocurrency industry is relatively still in its infancy and is expected to continuously evolve in the next 3-5 years

Regulations will be a key factor as this currently varies considerably around the world with some governments embracing it and others limiting their use

Topic 4

Manoeuvre Your Way in Quantitative Trading

Quantitative Trading Firms Structure

The size of quantitative trading firms can range from 2 people to 1000+ people and have 1 to 10+ offices globally

Typical Main Departments

- Trading
- Technology
- Business Operations

Trading Team

Team members that focuses on the actual trading operations

Quant Researcher

Derivatives Trader

Options Market Maker

Execution Trader

Quant Developer

Equities Analyst

Technology Team

Team members that focuses on the infrastructure and techonology of the firm

C++ Software Engineer

Trading Systems Support Engineer

Performance Engineer

Infrastructure Engineer

Network Engineer

Python Software Engineer

Business Ops Team

Team members that ensures the day to day operations of the firm

Compliance Manager

Business Intelligence Manager

Risk Manager

HR/Recruitment Manager

Middle Office Manager

Finance Manager

Understand Yourself

Understand yourself to find the Best-Fit Job

-What skills and experiences do you currently possess?
-What type of company culture do you want to be part of?
-Do you want to be a specialist in a certain area? Or do you want to be a generalist?

Understand the requirements of the job

-Look at the different Quantitative Trading firm profiles
-What type of roles are they hiring?
-What technical skills are they looking for?
-What soft skills are required?

Recruitment Process

Each firm has a different process. You can expect combinations of the below:

Phone/Video/F2F interview with HR

Phone/Video/F2F interview with various member of the Trading/Tech team

Aptitude/Mental Maths Assessments (Online or F2F)

Coding Assessment (Take home project, timed, concurrent with interviewer)

Topic 5

Q&A

Thank you!

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