Blockchain Analytics Course Overview

app.clarity.so/vishalsbase1/tags/da8b96a7-6a8d-4cd2-8704-e8a8ce848cbe

Blockchain Analytics Course Ov...

Course Credits - Vishal Sachdev / Ki Yun Lee / Matt Schawel / Nico Zhu
Two Credit - Eight Modules - Eight Weeks - Graduate Credit - Format : Asynchronous Online

Learning Objectives - After taking this course, students will be able to

Explain the concept of Web 3 and new business models enabled by Web 3

Understand how a blockchain works

Understand the basics of crypto currencies and their use cases.

Understand how smart contracts work

Understand three major use cases of blockchains - DeFi, NFT's and DeX's

Explore careers in Blockchain Analytics

Identify and list use cases for analytics in this context

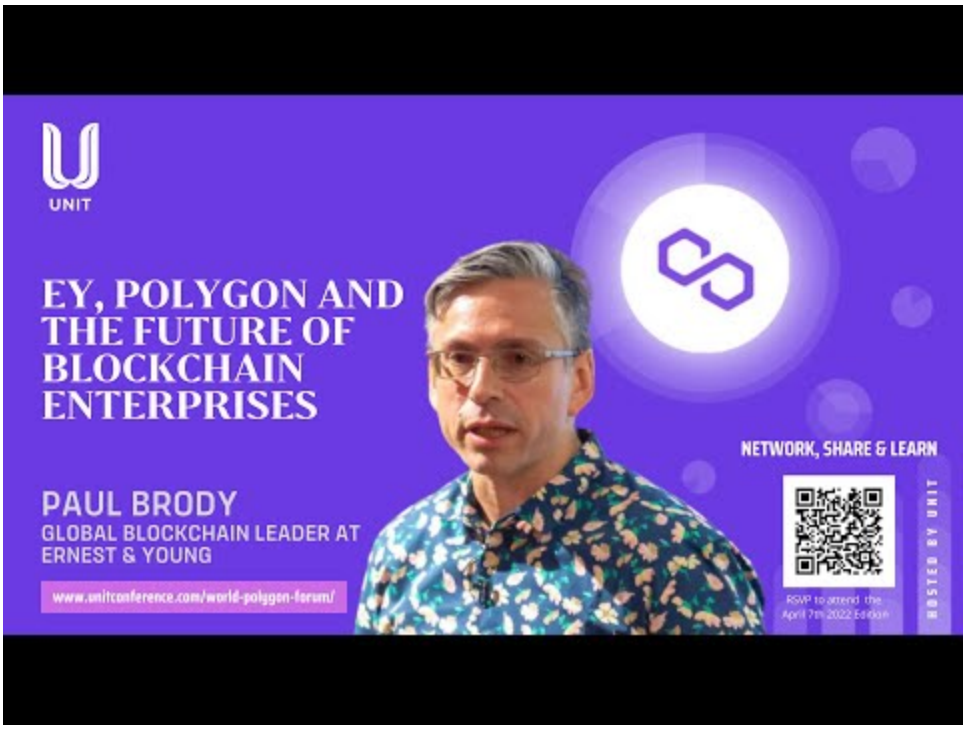
Understand data models underlying the Ethereum Blockchain, with a focus on Defi and NFT's

Analyze data from the blockchain for insights using SQL(Example 1, Example 2, Example 3)
Visualize these insights and build dashboards (Dashboard 1,

Why should you learn about Blockchains and Web 3?

The development and use of the internet has been one of the most disruptive technology in the last century. It has broadly seen three phases so far, at least from the perspective of an individual user, which is the perspective we maintain for now. These phases are often labeled, Web1, Web2 and now Web3. As Chris Dixon explains , Web1 (1990-2005)was the origin and maturation of the use case of the internet as a means of information dissemination, and users were mostly consumers of content or 'reading' content. Open protocols such as TCP/IP were the foundation of this stage, and were governed by the community. The Web2 (2005-2020) phase was the time for 'readers' to start becoming creators, beyond the basic blogs/wikis which existed earlier. This was the age of Youtube, Facebook and the like which made it easy for individuals to create

and share and in some cases monetize. In parallel the platforms such as Apple and amazon made it possible to sell apps or physical/digital content. Web 2 allowed a transition from the 'Read' web to a 'Read/Write' web. However, most of the value was controlled by centralized platforms, with significant take rates (such as 30% on Apple app store). In many cases users were the product, such as when using facebook/instagram and any other free-to-use social platform. Finally, the development of technologies such as blockchains allows platforms to be replaced with decentralized and permission less protocols. Once you implement smart contracts on such platforms, you enable immutable, uncensorable transactions for exchange of value , and code becomes law, without the need for trusted intermediaries such banks or other marketplace platforms. This increases the control that builders and users have while allowing for markets to develop coordinated using game theoretic principles implemented using tokens. This paradigm is captured by the moniker, **Web 3**.
While cryptocurrencies(a form of fungible tokens) such as Bitcoin were the first use-cases of blockchains, the subsequent use-cases of Decentralized Finance(DeFi), and Non-fungible Tokens(NFT's) have become very popular and attracted a lot of capital. While this boom in capital allocation has led to stratospheric valuations for many consumer facing applications(B2C- Business to consumer or C2C- consumer to consumer), blockchains have had a significant impact on different industries in the Business to Business(B2B) space for quite some time. According to a Deloitte white paper, companies in consumer and industrial products have been piloting blockchains to track origins of products/raw materials and history of the transfer from source to a consumers house, particularly for food and high value products. Healthcare organizations are exploring giving users more control over their data, securely. Governments are using them for asset registries and much more. A recent analysis by CB Insights discusses the impact of Blockchains on 65 industries beyond finance.
The video below explains the need for public blockchains with privacy (or hybrid blockchains) for businesses. EY has partnered with a leading player in public blockchains to develop this solution.



Watch Video At: https://youtu.be/N-kV801d7Qc

This course will cover the foundations of Blockchains and help you understand the use of blockchains for NFT's, DeFi, and Decentralized Exchanges before we get into analytics.

Why Blockchain Analytics

Blockchain Analytics is a growing field with recent searches for 'Blockchain Analyst' on recruiting websites generating many matches with many six figure salaries. The data and domain takes time and effort to understand, so there is an entry barrier, but even basic analysis skills on a complicated context can create a suitable platform for you to start a career. Every consulting firm has a practice in Blockchains (Search 'Blockchain Consulting' on google), so there is a lot of demand. Here is another list of jobs focused on data from blockchains (https://cryptocurrencyjobs.co/data/).
Once you understand the context(first four weeks), we move on to understanding the data that underlies the most popular chain, Ethereum, understand the data generated from smart contracts and then ask relevant questions, which you will answer using SQL and tools such as https://dune.xyz/browse/dashboards . We will focus on the domains of NFT's, DeFi and Decentralized Exchanges. We may even compete for public bounties put out by protocols and maybe you will join a DAO such as https://metricsdao.xyz/ and contribute.
What Will you learn

Concepts Web 1 vs Web2 vs Web 3 Why is Decentralization important Blockchains - Decentralized, immutable, censorship resistant ledger - So what ? Cryptocurrencies - Coins vs tokens NFT's - Beyond monkey pics Defi - Decentralized Finance- Finance

without banks (aka centralized, trusted parties) Smart Contracts and their Data Trail Data Models for Blockchains

Skills Setup and Use Wallets (at least two chains) Mint NFT's Create/Issue/Use Tokens SQL Data Visualization

Tools https://fweb3.xyz/ https://dune.xyz/browse/dashboards https://poap.xyz/ https://flipsidecrypto.xyz/ https://101.xyz/
Pre-Requisites

This course assumes an understanding and proficiency with SQL and basic data visualization skills(any tool such as Excel, Power BI, Tableau or even with Python or R) . If you have taken BADM554- Enterprise Database Management, you have the necessary skills.

If you don't have this background, you should plan on finishing some courses on SQL and data visualization on LinkedIn Learning (Free for all UIUC students) before the course. It is a 8 week course, and you will not have time during the course to learn these skills.

Format

This course will be asynchronous and online. The course will have videos and (lots) of readings to become comfortable with concepts. There will be no live lectures, but online office hours with the instructor and the TA. These concepts/videos will have quizzes that you will complete, before getting into discussions or assignments for the week. There will be mini projects in module 5/6/7 , but I expect that these will not be team projects, as coordination during summer is likely to be difficult.

You will learn from others in the real world using twitter and discord and bring that learning into the class.

Course Topics - Click on weekly modules to see the details

1 - What is money? Why Web3? Why Decentralization? Why blockchains?
2 - How Blockchains Work / Tokens Vs Coins / Types of Coins / Smart Contracts
3 - Blockchain applications - Fungible/Non Fungible Tokens(NFT's), Defi, Gaming, Supply chain
4 - Metaverse and DAOs
5 - Analytics - NFT's
6 - Analytics - Defi/DEX
7 - Analytics - Defi/DEX
8 - Project