

Building a dashboard to visualize and search public blockchain addresses

Team Project Spring 24 Chair of Data Science in the Economic and Social Sciences



Supervisor: Dr. Stefano Balietti



What is the Blockchain?

Img Source: https://www.wired.com/story/how-the-blockchain-is-redefining-trust/

What is the Blockchain?

OVERVIEW:

- It is a (simple) technology
- It is not Bitcoin, Bitcoin it's just an application
- It is a distributed (or replicated) ledger (database)
- It's decentralized: no single-point of failure
- It's tamper-proof and censor-resistant
- Allows everyone to <u>verify</u> who writes what

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Asset trading Asset tokenization Data management **Central Bank Digital Currencies** Provenance tracking in supply chains Remittances and cross-border payments Bootstrapping new projects Decentralized governance Identity management

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AltaVista (1995)

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Etherscan: The Blockchain "Explorer" for Ethereum



| ETH Price: \$2,481.60 (-1.68%) 🔛 Gas: 22 Gwei | | | | * |
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| 19212060 Fee Recipient beaverbuild 28 secs ago 141 txns in 12 secs | 0.02595 Eth | 0x362c21322f506 4 secs ago | From 0x8204c7914A128f To 0x881D40C08D300C | 0 Eth |
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The co-voting network of the Top-100 DAOs on the Ethereum blockchain



| Ethereum Dashboards All of your favourite Ethereum Dashboards in one place. Thanks to <u>Superphiz</u> for getting this started! | | | | | | | |
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https://www.ethdash.xyz/



Validate network and intersectional identities Find communities, e.g., coalitions of voters in DAOs (Decentralized Autonomous Organizations)

Testing network theories on new data Recruit people to participate in research

State of Crypto Survey







https://stateofcrypto.net



Prerequisites:

- Strong programming skills in general
- Front-end and back-end web development (in Node.JS / JavaScript)
- Solid understanding of software engineering
- Solid understanding of public blockchains
- Network Analysis

To learn quickly:

- Solidity
- Ethereum node management
- Network Database Neo4J

Useful

• NLP/LLMs (e.g., search querie in natural language grounded to network searches)

Work Process



Interaction

- Regular (bi-weekly) meetings with supervisor
- Codes shared regularly on Github
- Prototype updated regularly for testing

Initial deliverables

- Work Plan: Detailed specifications of platform requirements and tasks assigned to each team member
- Mid-term Progress Report with presentation

Final deliverables

- Running platform hosted on a dedicated server (provided)
- Platform can be explored visually (dashboard) and queried via API
- Written report (including software documentation and maintenance plan)



Building a dashboard to visualize and search public blockchain addresses

Responsible person: Dr. Stefano Balietti (<u>stefano.balietti@uni-mannheim.de</u>) Language: English Duration: up to 6 months (deadline Aug 2024) Min/Max number of participants: 2-5