BODHIVRUKSHA JOURNAL OF DIVERSE DISCIPLINE (BJDD)
An Open-Access, Peer-Reviewed, Multidisciplinary Scholarly Journal | Bi-Monthly | Multilingual | Academic Research
Vol 2, Issue 6 (November-December 2026) (Special Issue 2) | ISSN: 3139-1486 (Online) | ISSN: 3139-9819 (Print)

Blockchain Technology in the Digital Era: Bitcoin and Ethereum

Priya Mayur Ruke
PhD Research Scholar
Computer Science

Dr. Khushboo Shyampuria
Guide
Shri Jagdishprasad Jhabarmal Tibrewala University, Churela, Rajasthan(333010)
Email – wpriya380@gmail.com

Abstract :

The expanding importance of blockchain technology in digital transactions and information management has made it a significant field of study. More people are interested in this technology as a result of the growth and use of cryptocurrencies like Ethereum and Bitcoin. Blockchain makes it possible to keep track of transaction records over a dispersed network in which participating nodes validate and record data according to predetermined rules. This method can lessen reliance on a single governing authority, enhance traceability, and support data integrity, depending on how it is designed and implemented. Additionally, Ethereum allows developers to write smart contracts, which carry out pre-programmed actions when predetermined criteria are met. Blockchain is being investigated for use in financial services, supply chain tracking, healthcare information exchange, educational credential verification, and digital identity management, in addition to cryptocurrency systems. However, careful evaluation of transaction processing capacity, infrastructure costs, secrecy requirements, governance, and relevant legal regulations is necessary for its practical deployment. The basic ideas of blockchain, its main applications, related drawbacks, and potential future development paths are all covered in this essay.

Key Words: Bitcoin, Blockchain, Cryptocurrency, Ethereum, Smart Contracts

I. INTRODUCTION

In computer science and information technology, blockchain technology has become a major advancement, especially in the fields of decentralized systems and digital transactions. Prior to the release of Satoshi Nakamoto's Bitcoin paper in 2008, the idea of digital currencies functioning without a central authority had been investigated; it is actual implementation acquired significant traction. A peer-to-peer electronic cash system backed by blockchain-based record keeping was presented in this paper. The suggested approach has impacted the creation of cryptocurrencies and several blockchain-based applications, despite the fact that Nakamoto's actual identity is still unknown. Developers, academics, investors, and organizations looking for creative answers to both financial and non-financial problems are now interested in this technology. The evolution of decentralized digital currencies, including some of the methods that came before Bitcoin, is presented in this paper along with an explanation of the basic ideas behind Ethereum and Bitcoin. Despite having different technical designs and capabilities, these two platforms are explored

BODHIVRUKSHA JOURNAL OF DIVERSE DISCIPLINE (BJDD)
An Open-Access, Peer-Reviewed, Multidisciplinary Scholarly Journal | Bi-Monthly | Multilingual | Academic Research
Vol 2, Issue 6 (November-December 2026) (Special Issue 2) | ISSN: 3139-1486 (Online) | ISSN: 3139-9819 (Print)

because of their significant roles in the bitcoin ecosystem. The constraints of bitcoin and blockchain adoption, such as scalability, security issues, regulatory uncertainty, and operational difficulties, are also taken into account in this article. The goal of this debate is to give readers a clear knowledge of the evolution, operation, uses, and limitations of blockchain technology.

II. A FEW INTIAL CONCEPTS FOR DECENTRALIZED DIGITAL CURRENCIES

Digital money was a concept long before it was widely used in real life. Early studies investigated how cryptographic techniques could safeguard users' privacy while facilitating financial transactions and internet communication. Chaum's research focused on communication techniques that protect privacy, such as return addresses, digital pseudonyms using public-key encryption, and untraceable electronic mail. These ideas sought to facilitate anonymous communication without relying on a central, reliable middle man. Law and his colleagues also studied electronic cash systems that used public-key cryptography in a trust paradigm based on banking. Their suggested model included banks as trusted authority, in contrast to strategies aiming to reduce centralized dependence. These early studies gave valuable context for later advancements in digital currency and aided in the creation of safe electronic payment systems.

Computational techniques that could facilitate digital transactions and promote equitable participation in dispersed networks were investigated in a number of early research. By making senders complete a predetermined amount of computer effort, Dwork and Naor's computational pricing strategy aims to deter unsolicited electronic messages. This concept developed into a crucial forerunner of proof-of-work procedures. Subsequent ideas, such as bit gold, b-money, and reusable proof of work, looked into ways to link digital value to computational effort and enable electronic transactions without totally depending on traditional financial institutions.

KARMA, a peer-to-peer resource-sharing system put out by Vishnumurthy and associates, was another addition to distributed resource management. Addressing free-riding- the practice of using common resources without contributing equally- was its main goal. In this paradigm, a set of network members share accountability for keeping these records, while participants gain credit for contributing resources and utilize that credit when consuming resources.

Notwithstanding their contributions, these early methods were unable to address all of the issues related to decentralized digital payments. Preventing double-spending, in which the same digital asset is utilized in several transactions, continued to be a top priority. Conventional centralized payment systems can depend on a reliable organization to verify transactions and keep an accurate record. However, in decentralized settings, players must reach a consensus regarding the legitimacy of transactions without relying on a single governing body. Additionally, the network must fend off attempts to disseminate false information or interfere with its functionality.

One method for achieving consensus among dispersed parties is using quorum-based methods. To decide which information should be accepted, these systems employ voting processes or group decisions. The assumptions made on the quantity and behavior of participating nodes determine how reliable they are. The Sybil assault, in which an adversary creates or manages several identities to obtain disproportionate influence over the decision-making process, is a serious threat. Therefore, in order to prevent identity manipulation and maintain consensus regarding legitimate transactions, decentralized systems must have the necessary safeguards.

BODHIVRUKSHA JOURNAL OF DIVERSE DISCIPLINE (BJDD)
An Open-Access, Peer-Reviewed, Multidisciplinary Scholarly Journal | Bi-Monthly | Multilingual | Academic Research
Vol 2, Issue 6 (November-December 2026) (Special Issue 2) | ISSN: 3139-1486 (Online) | ISSN: 3139-9819 (Print)

III. BITCOIN AND BLOCKCHAIN TECHNOLOGY

A.Bitcoin Essentials

Santoshi Nakamoto provided a solution to the issues with digital currency implementation and usability, particularly the double-spending issue, in his now-famous paper. Although there remains conjecture over Nakamoto's genuine identity, it is clear that he continued to be involved in the Bitcoin project until 2010, at which point he took a back seat and turned the project up to the community for additional development.

He suggested a mechanism that generates the computational verification of the chronological sequence of transactions using a P2P distributed timestamp server. A series of digital signatures is called an electronic coin. Every transaction is described as a collection of the public key of the subsequent owner and the digitally signed hash of the prior transaction. As illustrated in Fig. 1, the transaction is signed using the private key and verified using the public key.The wallet, which can be implemented in hardware, software, or online, stores the public key.

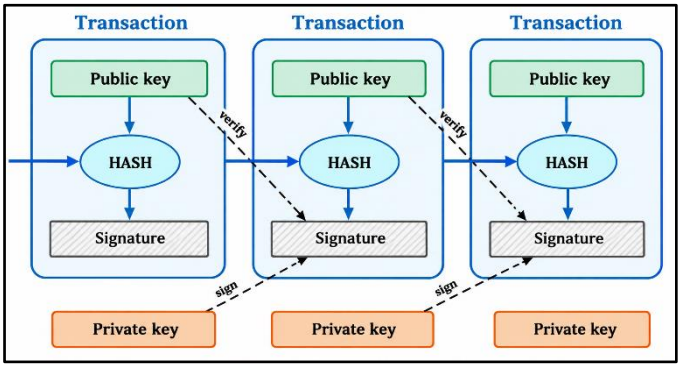


Fig 1.: The Structure of Transaction in a Bitcoin Blockchain

The Bitcoin ledger is described as a state transition system that consists of a transaction-based state transition function and a state that displays the ownership status of all current Bitcoins. A new state is the result of the state transition function. If the sender has enough bitcoins to complete a transaction, this process results in state changes for both the sender and the recipient; if not, an error occurs.

B.Bitcoin Transactions

Each transaction is uniquely recognized by its hash value, which serves as both a transaction identifier and a collection of inputs and outputs. The output of each transaction can only be used once as an input throughout the blockchain. Attempting to refer to the same output twice is forbidden in the network because it results in the double-spending problem. If the transaction's output hasn't been previously referenced, it's called an unspent transaction output (UTXO); if it has, it's called a spent transaction output (STXO). A transaction can have more than one input and only two outputs. Multiple inputs can be used to combine smaller coin transfers, and the outputs can be the amount sent to the receiver or the change returned to the sender.

C.Proof-of-Work and Blockchain

BODHIVRUKSHA JOURNAL OF DIVERSE DISCIPLINE (BJDD)
An Open-Access, Peer-Reviewed, Multidisciplinary Scholarly Journal | Bi-Monthly | Multilingual | Academic Research
Vol 2, Issue 6 (November-December 2026) (Special Issue 2) | ISSN: 3139-1486 (Online) | ISSN: 3139-9819 (Print)

By requiring a proof-of-work from each node that validates the transaction, the Bitcoin network avoids (or at least lessens) these situations. The nodes must perform several intricate computations in order to prove that they are authorized network participants. As long as the overall processing power of the honest nodes exceeds the computational power of the attacker, the system will remain stable and all lawful transactions will occur.A set of transactions, a zero, and the hash of the previous block are used to declare a block.

A timestamp server hashes a block and makes it public to show that the data it contains must have existed at the time of hashing. The block's timestamp must be greater than the timestamp of the block preceding it in the chain and less than two hours in the future, according to the timestamp server. These hashes are linked together in a chain known as a blockchain, as seen in Fig. 2. One of the most important aspects of the blockchain is its capacity to trace transactions back to any point in time.

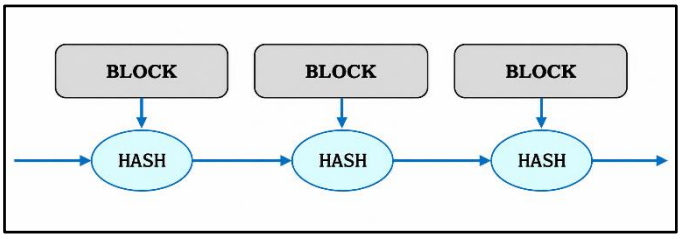


Fig 2: The Blockchain Scheme

A block's transactions are hashed in a Merkle tree. A Merkle tree is a kind of binary tree that has a large number of leaf nodes, each of which has a root that is a hash of its offspring. A Bitcoin block made out of a Merkle tree of transaction hashes is depicted in Fig. 3. The Merkle tree is essential for long-term maintainability since any irregularity in the tree will show up somewhere in the chain. This is done in order to make room on the nodes for the blockchain's storage.

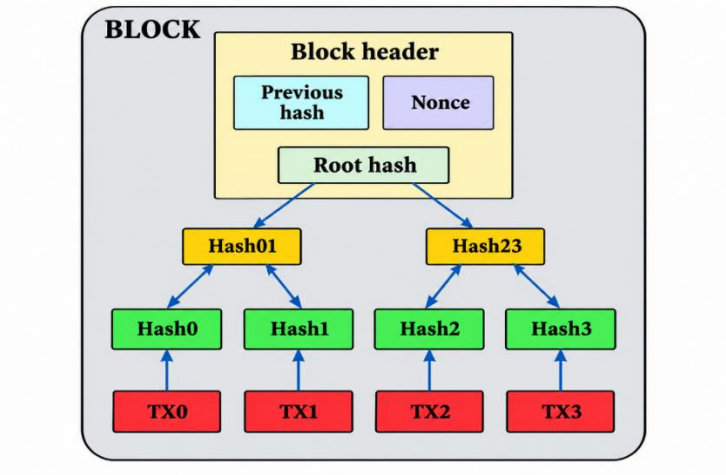


Fig 3: A Bicoin block with hashed transactions into a Merkle tree

D. Bitcoin network and mining:

BODHIVRUKSHA JOURNAL OF DIVERSE DISCIPLINE (BJDD)
An Open-Access, Peer-Reviewed, Multidisciplinary Scholarly Journal | Bi-Monthly | Multilingual | Academic Research
Vol 2, Issue 6 (November-December 2026) (Special Issue 2) | ISSN: 3139-1486 (Online) | ISSN: 3139-9819 (Print)

Bitcoin miners create new blocks through mining and receive rewards via a Coinbase transaction, which introduces new bitcoins into circulation. Transactions are broadcast to network nodes, verified, and grouped into blocks using proof-of-work, with a new block generated roughly every ten minutes. When multiple blocks are created simultaneously, a temporary fork may occur; the network follows the chain that is valid and has the most collected proof of work to reach consensus and resolve the fork.

E. Scalability issue with Bitcoin

Due to its initial 1MB block size, Bitcoin's scalability is limited to less than seven transactions per secons. Large amounts of storage might be needed to greatly increase transaction capacity, which could result in network centralization. Bitcoin has undergone hard and soft forks as a result of various solutions. While a hard fork adds incompatible rules that earlier software cannot understand, potentially dividing the blockchain into distinct networks, a soft fork is a backward compatible protocol change.

F. Bitcoin Cache and Bitcoin Gold

Bitcoin Cash (BCH) was created on August 1, 2017, following a hard fork at block 478,558, which expanded the block size to 8MB to speed up transaction confirmations. On October 24, 2017, Bitcoin Gold (BTG) had another hard fork at block 491,407 in an attempt to reduce dependency on ASIC mining. Equihash, which supports GPU mining, replaced Bitcoin's SHA-256 algorithm and included mining difficulty changes for each new block. Bitcoin holders received equivalent holdings of BCH and BTG at the time of their respective forks.

IV. ETHEREUM

A. Overcoming Bitcoin's Limitations

In order to get around Bitcoin's scripting restrictions, Vitalik Buterin created Ethereum, a Turing-complete programming language that can handle intricate calculations and loops. With Ethereum, users can design unique ownership rules, transaction formats, and state transitions for their smart contracts. By taking into account uncle blocks and compensating their miners, its initial consensus method reduced stale blocks and mining centralization using a modified version of the GHOST protocol. Uncle blocks from up to 7 generations were supported by Ethereum's GHOST protocol, which offered incentives even in cases where blocks were not included in the main chain.

B. Ethereum accounts

Every Ethereum account has a 20-byte address and can be either a contract account managed by code or an externally owned account managed by a private key. Ether balance and the nonce, hash of the contract & the storage root are the four parts of an account. While the Ether balance records funds in Wei, where 1 ETH equals \\(10^{18}\\) Wei, the nonce prohibits duplicate transactions. The storage root represents the account's data in a Merkle Patricia tree, and the contract code hash identifies the smart contract code that is run during message calls. These trees are used by Ethereum to hold key-value pairs; the state, transactions, and receipts are represented by the roots in the block header.

C. Ethereum Transactions & Messages

BODHIVRUKSHA JOURNAL OF DIVERSE DISCIPLINE (BJDD)
An Open-Access, Peer-Reviewed, Multidisciplinary Scholarly Journal | Bi-Monthly | Multilingual | Academic Research
Vol 2, Issue 6 (November-December 2026) (Special Issue 2) | ISSN: 3139-1486 (Online) | ISSN: 3139-9819 (Print)

A cryptographically signed instruction to create an account or send a message from an account that is not owned by you is called an Ethereum transaction. The recipient, sender's signature, Ether value, optional data, STARTGAS, and GASPRICE are all included. STARTGAS establishes the maximum gas limit, GASPRICE calculates the cost per unit of gas and miners' incentives, and gas quantifies computing work. Before changing account balances and running contract code, transactions are verified by verifying the signature and nonce. State changes are reversed, but miners may keep any applicable fees, if the sender does not have enough Ether or if the gas limit is exceeded. Additionally, smart contracts have the ability to communicate with other contracts, causing their code to be executed.

D. Ethereum blockchain

Ethereum's blockchain is comparable to bitcoin's , but it keeps track of the most recent state and transaction records. Headers with hashes, transaction information, gas limits, timestamps, and other verification data are included in its blocks. Ethash, a memory-intensive proof-of-work algorithm intended to lessen ASIC mining advantages, was initially utilized by Ethereum. The Ethereum Virtual Machine (EVM) is used to carry out Solidity-based smart contracts. Decentralized applications (DApps) for cloud computing, insurance, file storage, finance, identity verification, and prediction markets are all supported by Ethereum. Ethereum has been utilized by projects including Golem, Augur, Civic, OmiseGO, and Storj to raise money through Intial Coin Offering (ICOs). In order to increase scalability and energy efficiency, Ethereum has also moved toward proof-of-stake consensus.

E. ERC20 Token

Tokens can be issued on the Ethereum platform. The ERC20 Token Standard is implemented by smart contracts based on Ethereum.

This standard outlines a contract that must be carried out and consists of two events and six functions that completely characterize an account:

```
contract ERC20Interface {
    function totalSupply() public constant returns (uint);
    function balanceOf(address tokenOwner) public constant returns (uint
balance);
    function allowance(address tokenOwner, address spender) public constant
returns (uint remaining);
    function transfer(address to, uint tokens) public returns (bool success);
    function approve(address spender, uint tokens) public returns (bool
success);
    function transferFrom(address from, address to, uint tokens) public returns
(bool success);
    event Transfer(address indexed from, address indexed to, uint tokens);
    event Approval(address indexed tokenOwner, address indexed spender,
uint tokens);
}
```

V. CONCLUSION

BODHIVRUKSHA JOURNAL OF DIVERSE DISCIPLINE (BJDD)
An Open-Access, Peer-Reviewed, Multidisciplinary Scholarly Journal | Bi-Monthly | Multilingual | Academic Research
Vol 2, Issue 6 (November-December 2026) (Special Issue 2) | ISSN: 3139-1486 (Online) | ISSN: 3139-9819 (Print)

Ethereum and Bitcoin are currently the most popular and valued cryptocurrencies. They are based on blockchain technology, which is intended to supply a trust mechanism for peer-to-peer networks based on the consensus of the majority of nodes. The early stages of the adoption of digital money, the foundations of blockchain technology, and its most promising implementations, Ethereum and Bitcoin, have all been briefly summarized chronologically in this paper.

The previous few years have seen a sharp increase in the number of cryptocurrencies, hashing algorithms, and network consensus agreements. Noteworthy cryptocurrencies include Ripple, Cardano, NEO, Stellar, Litecoin, EOS, IOTA, Dash, Monero, TRON, Qtum, Lisk, Tether, Stratis, Zcash, Steem, Siacoin, Verge, Electroneum, Nxt, Dogecoin, and many more.

REFERENCE

1. Chaum, D. (1981). Untraceable electronic mail, return addresses, and digital pseudonyms. Communications of the ACM, 24(2), 84–88. https://doi.org/10.1145/358549.358563
2. Law, L., Sabett, S., &Solinas, J. (1996). How to make a mint: The cryptography of anonymous electronic cash. American University Law Review, 46(4), 1131–1162.
3. Dwork, C., &Naor, M. (1992). Pricing via processing or combatting junk mail. In Advances in cryptology—CRYPTO '92 (pp. 139–147). Springer. https://doi.org/10.1007/3-540-48071-4_10
4. Dai, W. (1998). B-money. https://www.weidai.com/bmoney.txt
5. Finney, H. (2004). RPOW (Reusable Proofs of Work). https://nakamotoinstitute.org/finney/rpow/
6. Szabo, N. (2005). Bit gold. https://unenumerated.blogspot.rs/2005/12/bit-gold.htm
7. Tschorsch, F., &Scheuermann, B. (2016). Bitcoin and beyond: A technical survey on decentralized digital currencies. IEEE Communications Surveys & Tutorials, 18(3), 2084–2123. https://doi.org/10.1109/COMST.2016.2535718
8. Vishnumurthy, V., Chandrakumar, S., &Sirer, E. G. (2003). KARMA: A secure economic framework for peer-to-peer resource sharing. In Proceedings of the 1st Workshop on Economics of Peer-to-Peer Systems.
9. Szabo, N. (1998). Secure property titles with owner authority. https://nakamotoinstitute.org/secure-property-titles/
10. Malkhi, D., & Reiter, M. (1998). Byzantine quorum systems. Distributed Computing, 11(4), 203–213.
11. Douceur, J. R. (2002). The Sybil attack. In Peer-to-peer systems: First International Workshop, IPTPS 2002, revised papers (pp. 251–260). Springer. https://doi.org/10.1007/3-540-45748-8_24
12. Nakamoto, S. (2008). Bitcoin: A peer-to-peer electronic cash system. https://bitcoin.org/bitcoin.pdf
13. Ethereum. (n.d.). A next-generation smart contract and decentralized application platform. https://github.com/ethereum/wiki/wiki/White-Paper
14. Back, A. (2002). Hashcash—A denial of service counter-measure. http://www.hashcash.org/papers/hashcash.pdf
15. Eastlake, D., 3rd, & Hansen, T. (2011). US secure hash algorithms (SHA and SHA-based HMAC and HKDF) (RFC 6234). Internet Engineering Task Force. https://doi.org/10.17487/RFC6234
16. Merkle, R. C. (1988). A digital signature based on a conventional encryption function. In C. Pomerance (Ed.), Advances in cryptology—CRYPTO '87 (pp. 369–378). Springer. https://doi.org/10.1007/3-540-48184-2_32

BODHIVRUKSHA JOURNAL OF DIVERSE DISCIPLINE (BJDD)
An Open-Access, Peer-Reviewed, Multidisciplinary Scholarly Journal | Bi-Monthly | Multilingual | Academic Research
Vol 2, Issue 6 (November-December 2026) (Special Issue 2) | ISSN: 3139-1486 (Online) | ISSN: 3139-9819 (Print)

17. Merkle, R. C. (1980). Protocols for public key cryptosystems. In Proceedings of the 1980 IEEE Symposium on Security and Privacy (pp. 122–133). IEEE.
18. Bitcoin.com. (n.d.). Bitcoinblockchain size. https://charts.bitcoin.com/chart/blockchain-size
19. Poon, J., &Dryja, T. (2016). The Bitcoin Lightning Network: Scalable off-chain instant payments. https://lightning.network/lightning-network-paper.pdf
20. Trillo, M. (2013, October 10). Stress test prepares VisaNet for the most wonderful time of the year. Visa. https://www.visa.com/blogarchives/us/2013/10/10/stress-test-prepares-visanet-for-the-most-wonderful-time-of-the-year/index.html
21. Castor, A. (2017, March). A short guide to Bitcoin forks. CoinDesk. https://www.coindesk.com/short-guide-bitcoin-forks-explained/
22. Bitcoin Wiki contributors. (n.d.). Transaction malleability. Bitcoin Wiki. https://en.bitcoin.it/wiki/Transaction_malleability
23. Cointelegraph. (n.d.). SegWit explained. https://cointelegraph.com/explained/segwit-explained
24. Hertig, A. (2017, August). SegWit goes live: Why Bitcoin's big upgrade is a blockchain game-changer. CoinDesk. https://www.coindesk.com/50-blocks-segwit-bitcoins-coming-upgrade-blockchain-game-changer/
25. Sundararajan, S. (2018, January). Blockstream launches micropayments processing system for Bitcoin apps. CoinDesk. https://www.coindesk.com/blockstream-launches-micropayments-processing-system-for-bitcoin-apps/
26. Bitcoin Cash. (n.d.). Bitcoin Cash. https://www.bitcoincash.org
27. Bitcoin Gold. (2017). Bitcoin Gold roadmap [PDF]. https://bitcoingold.org/wp-content/uploads/2017/10/BitcoinGold-Roadmap.pdf
28. Biryukov, A., &Khovratovich, D. (2017). Equihash: Asymmetric proof-of-work based on the generalized birthday problem. Ledger, 2, 1–30. https://doi.org/10.5195/ledger.2017.48
29. Buterin, V. (2013). Ethereum white paper: A next generation smart contract and decentralized application platform. https://www.the-blockchain.com/docs/Ethereum_white_paper-a_next_generation_smart_contract_and_decentralized_application_platform-vitalik-buterin.pdf
30. Sompolinsky, Y., & Zohar, A. (2015). Secure high-rate transaction processing in Bitcoin. In Financial cryptography and data security (pp. 507–527). Springer.
31. Wood, G. (2018). Ethereum: A secure decentralised generalised transaction ledger (Byzantium version). https://ethereum.github.io/yellowpaper/paper.pdf
32. Ethereum. (n.d.). Merkle Patricia trie specification (also Merkle Patricia tree). GitHub. https://github.com/ethereum/wiki/wiki/Patricia-Tree
33. Buterin, V. (2013). Dagger: A memory-hard to compute, memory-easy to verify scrypt alternative. Hashcash. http://www.hashcash.org/papers/dagger.html
34. Dryja, T. (2014). Hashimoto: I/O bound proof of work.
35. Etherscan. (n.d.). Etherscan. https://etherscan.io
36. Filiba, J. (2017, December). Ethereum breaks one million transactions in a single day. Coinsquare. https://discover.coinsquare.io/tech/ethereum-one-million-transaction-day/
37. Silva, L. (n.d.). Ethereum's road map for 2017. ETHNews. https://www.ethnews.com/ethereums-road-map-for-2017
38. Moskov, A. (2017). What is Ethereum? CoinCentral. https://coincentral.com/what-is-ethereum/

BODHIVRUKSHA JOURNAL OF DIVERSE DISCIPLINE (BJDD)
An Open-Access, Peer-Reviewed, Multidisciplinary Scholarly Journal | Bi-Monthly | Multilingual | Academic Research
Vol 2, Issue 6 (November-December 2026) (Special Issue 2) | ISSN: 3139-1486 (Online) | ISSN: 3139-9819 (Print)

39. Warner, M. (2017, November 9). Expanse DAO seeks to develop decentralised Ethereum. AllCoinsNews. http://allcoinsnews.com/2017/11/09/expanse-dao-seeks-to-develop-decentralised-ethereum/
40. Buntinx, J. P. (2017, December). What is Ethereum Fog? The Merkle. https://themerkle.com/what-is-ethereum-fog/
41. Bitcoin.com. (2018, January). EtherZero—A revolutionary Ethereum hard fork, forking on 19th Jan 2018. https://news.bitcoin.com/pr-etherzero-a-revolutionary-ethereum-hard-fork-forking-on-19th-jan-2018/
42. The Ethereum Wiki. (n.d.). ERC20 token standard. https://theethereum.wiki/w/index.php/ERC20_Token_Standard
43. CoinMarketCap. (n.d.). Cryptocurrency market capitalizations. https://coinmarketcap.com/
44. Vujičić, D., Jagodić, D., &Ranić, S. (2018). Blockchain technology, bitcoin, and Ethereum: A brief overview. 2018 17th International Symposium INFOTEH-JAHORINA (INFOTEH), 1–6. https://doi.org/10.1109/INFOTEH.2018.8345547
45. Mohammed, A. H., Abdulateef, A. A., & Abdulateef, I. A. (2021). Hyperledger, Ethereum and blockchain technology: A short overview. In 2021 3rd International Congress on Human-Computer Interaction, Optimization and Robotic Applications (HORA) (pp. 1–6). IEEE. https://doi.org/10.1109/HORA52670.2021.9461294

- www.google.com
- www.ijirset.com
- loyolaacademy.edu.in
- globalmainstreamjournal.com
- www.researchgate.net
- www.coursehero.com
- iccset2020.royalcet.ac.in
- dokumen.pub
- bitkan.com
- link.springer.com
- nfts.wtf
- extropy.io
- blog.ultima.io
- researchoutput.csu.edu.au
- www.coindesk.com
- www.ledgerjournal.org
- https://link.springer.com/chapter/10.1007/978-981-99-2264-2_6
- https://eudl.eu/doi/10.4108/eai.8-4-2019.157416#:~:text=Towards%20Scalability%20Trade%2Doff,scalability%2C%20trust%7D%2C
- https://www.texilajournal.com/v2/academic-research/article/849-a-crictal-review
- https://www.proquest.com/docview/3388087515
- https://link.springer.com/book/10.1007/978-981-95-2196-8
- https://link.springer.com/book/10.1007/978-3-032-18860-1

BODHIVRUKSHA JOURNAL OF DIVERSE DISCIPLINE (BJDD)
An Open-Access, Peer-Reviewed, Multidisciplinary Scholarly Journal | Bi-Monthly | Multilingual | Academic Research
Vol 2, Issue 6 (November-December 2026) (Special Issue 2) | ISSN: 3139-1486 (Online) | ISSN: 3139-9819 (Print)

- https://www.taylorfrancis.com/books/edit/10.1201/9781032684994/artificial-intelligence-blockchain-computing-security-volume-2-arvind-dagur-karan-singh-pawan-singh-mehra-dhirendra-kumar-shukla
- https://www.taylorfrancis.com/books/edit/10.1201/9781003599593/blockchain-technology-water-environmental-systems-saeid-eslamian-faezeh-eslamian
- https://link.springer.com/book/10.1007/978-3-319-94478-4
- https://www.taylorfrancis.com/books/edit/10.1201/9780429324932/blockchain-cybersecurity-privacy-yassine-maleh-mohammad-shojafar-mamoun-alazab-imed-romdhani
- https://www.sciencedirect.com/science/article/abs/pii/S1084804521001557?via%3Dihub