The MEV Letter

is a weekly collection of papers, articles and resources related to MEV. The intention of this letter is to provide a comprehensive summary of the latest research, discussions, and developments in the space, with links for further reading.

Papers & Articles

- [TTEE - Update on technical work](#) by [@Quintus](#) provides an update on [Project Trustless TEE](#) by outlining the problem space and ongoing efforts.

- [Native rollups—superpowers from L1 execution](#) by [Justin Drake](#) suggests a pathway for EVM-equivalent rollups to inherit full Ethereum L1 security, and eliminate the need for security councils.

- [Block-level fee markets: Four easy pieces](#) by [Barnabé Monnot](#) discusses alternative approaches for metering and pricing blockchain resources to improve scalability and cost efficiency.

- [Embedded Rollups, Part 1: Introduction](#) by [Lin Oshitani](#) and [Conor McMenamin](#) explores embedded rollups and demonstrates a key-value store example, which can be applied to services like [ENS](#) and [Keystore](#).

- [Post](#) by [Conor McMenamin](#)

- [Post](#) by [Lin Oshitani](#)

- [Post](#) by [Conor McMenamin](#)

- [Post](#) by [Lin Oshitani](#)

- [Embedded Rollups, Part 2: Shared Bridging](#) by [Lin Oshitani](#) and [Conor McMenamin](#) introduces an embedded shared-bridge rollup to enable fast and efficient cross-chain interoperability.

- [Block-Level Warming](#) by [Toni Wahrstätter](#) proposes block-level address and keeping accessed slots warm throughout a block's execution to optimize gas costs and improve efficiency.

- [Post](#) by [Toni Wahrstätter](#)

- [Reference Implementation](#) by [Toni Wahrstätter](#)

- [Post](#) by [Toni Wahrstätter](#)

- [Reference Implementation](#) by [Toni Wahrstätter](#)

- [Joint Report on recent developments in crypto-assets](#) by [ESMA](#) provides an analytical assessment on DeFi, MEV, market trends, and regulatory challenges under [MiCA](#).

- [Thread](#) by [Marina Markezic](#)

- [Thread](#) by [Marina Markezic](#)

- [Ethereum Macroeconomics via Dynamics ½](#) by [Eric Downes](#) analyzes Ethereum's macroeconomics and how staking, inflation, and validator behavior influence network stability and governance over time.

- [MEATBAL: Mitigating Extractive Actions via Trusted Blockchain Accountability Layer, or How to stop 95% of DeFi Hacks at Scale](#) by [Sam Bacha](#) propose the implementation of two new Ethereum JSON-RPC methods for MEV Relays to mitigate risks associated with malicious activities.

- [Post-Election Thoughts Arbitrage Trading in Prediction Markets](#) by [Taker](#) examines pricing discrepancies across prediction markets and arbitrage strategies from the US presidential election.

- [Thread](#) by [Taker](#)

- [Thread](#) by [Taker](#)

- [History of Application Design](#) by [@tesa](#) traces the evolution of application design from command-line interfaces, to mobile, web3, and AI agents.

- [Unpacking The Next Generation Of Ethereum L2s (I): Based Rollups](#) by [Pavel Paramonov](#) explores the architecture, benefits, and trade-offs of based rollups.

- [To Pump The Gas Or Not: Analyzing The Ethereum Gas Limit Debate](#) by [Seongwan Park](#) analyzes the implications of a gas limit increase on network decentralization and stability.

- [Thread](#) by [2077 Research](#)

- [Thread](#) by [2077 Research](#)

- [How Espresso Network is an interoperability "superchain" for all Ethereum L2s](#) by [Ben Fisch](#) details how [Espresso Network](#) is designed to enable fast and trust-minimized interoperability for L2s.

- [Delegation in Bolt: Outsourcing Sophistication While Preserving Decentralization](#) by [Moncesco](#) and [mempirate](#) explores levels of delegation in [bolt](#), analyzing their implications for centralization, censorship-resistance, and fault attribution.

Posts & Threads

- [@SHL0MS](#) published a [post](#) introducing [hell.tech](#), a memetic experiment leveraging [Teleport](#) to allow users to make deals with [@s8n](#) and give it secure account access to enact consequences if the terms are broken.

- [Post](#) by [@sxysun](#)

- [Post](#) by [Ropirito](#)

- [Post](#) by [@sxysun](#)

- [Post](#) by [Ropirito](#)

- [Deal with @s8n (How?)](#) by [@sxysun](#) outlines further details related to the social experiment where users negotiated deals with [@s8n](#) by staking their digital identity as collateral.

- [Uma Roy](#) published a [thread](#) outlining how [native rollups](#) are designed to inherit the security of Ethereum L1, maintain EVM compatibility, and scale using ZKPs.

- [Ari Kiry](#) published a [thread](#) describing [Chainlink](#)'s efforts to redistribute MEV with [Smart Value Recapture](#) and [Protected Order Flow framework](#).

- [Taiko Gwyneth](#) published a [thread](#) outlining how preconfirmations are designed to provide instant transaction assurances on rollups.

- [Markus](#) published a [thread](#) describing why execution preconfirmations are ineffective in CEX-DEX arbitrage, due to information leakage.

- [EigenPhi](#) published a [thread](#) detailing how a user got sandwiched and lost $796K when adding liquidity to a Uniswap v2 pool, and provides information on how to mitigate these risk.

- [Spire](#) published a [thread](#) explaining how builders are selected in [Spire](#)'s [Based Stack](#).

Talks & Discussions

- [Recordings](#) from [Columbia CryptoEconomics Working Session 2024](#) hosted by [Briger Family Digital Finance Lab](#), [School of Engineering and Applied Science at Columbia University](#) and [Ethereum Foundation](#) have been uploaded:

- [MEV Capture](#) by [Fahad Saleh](#)

- [Resonance](#) by [Naveen Durvasula](#)

- [L2 Interop](#) by [Noah Pravecek](#)

- [Prover marketplace economics](#) by [Jacob Everly](#) and [Tim Carstens](#)

- [Future of staking](#) by [Caspar Schwarz-Schilling](#), [Ansgar Dietrichs](#), [Francesco D'Amato](#) and [Barnabé Monnot](#)

- [An APS research program](#) by [Julian Ma](#)

- [Picking the EL fruits](#) by [Dankrad Feist](#) and [Ansgar Dietrichs](#)

- [Unifying Ethereum's Priority Markets](#) by [@Quintus](#)

- [Snarkify everything!](#) by [Justin Drake](#)

- [Future of staking breakout](#) by [Ansgar Dietrichs](#), [Barnabé Monnot](#), [Caspar Schwarz-Schilling](#) and [Francesco D'Amato](#)

- [Future of interoperability](#) by [Ellie Davidson](#)

- [Closing Remarks](#) by [Tim Roughgarden](#), [Julian Ma](#), [Dankrad Feist](#), [Ansgar Dietrichs](#), [@Quintus](#) , [Justin Drake](#), [Barnabé Monnot](#) and [Ellie Davidson](#)

- [Post](#) by [Tim Roughgarden](#)

- [MEV Capture](#) by [Fahad Saleh](#)

- [Resonance](#) by [Naveen Durvasula](#)

- [L2 Interop](#) by [Noah Pravecek](#)

- [Prover marketplace economics](#) by [Jacob Everly](#) and [Tim Carstens](#)

- [Future of staking](#) by [Caspar Schwarz-Schilling](#), [Ansgar Dietrichs](#), [Francesco D'Amato](#) and [Barnabé Monnot](#)

- [An APS research program](#) by [Julian Ma](#)

- [Picking the EL fruits](#) by [Dankrad Feist](#) and [Ansgar Dietrichs](#)

- [Unifying Ethereum's Priority Markets](#) by [@Quintus](#)

- [Snarkify everything!](#) by [Justin Drake](#)

- [Future of staking breakout](#) by [Ansgar Dietrichs](#), [Barnabé Monnot](#), [Caspar Schwarz-Schilling](#) and [Francesco D'Amato](#)

- [Future of interoperability](#) by [Ellie Davidson](#)

- [Closing Remarks](#) by [Tim Roughgarden](#), [Julian Ma](#), [Dankrad Feist](#), [Ansgar Dietrichs](#), [@Quintus](#) , [Justin Drake](#), [Barnabé Monnot](#) and [Ellie Davidson](#)

- [Post](#) by [Tim Roughgarden](#)

- [Indexed Podcast](#): [Solana MEV w/ Ghost](#) invites [chris](#) to explore the intricacies of how MEV varies on Ethereum and Solana.

- [Post](#) by [Indexed Podcast](#)

- [Post](#) by [@sui414](#)

- [Post](#) by [Indexed Podcast](#)

- [Post](#) by [@sui414](#)

- [L2 Interop Working Group #1](#) hosted by [Josh Rudolf](#) brought together representatives from the L2s ecosystem to discuss standards for chain-specific addresses and cross-chain messaging.

- [Notes](#) by [Josh Rudolf](#)

- [Notes](#) by [Josh Rudolf](#)

- [EVM Resource Pricing Breakout #1](#) hosted by [Davide Crapis](#) invited core devs and researchers to discuss updates to gas pricing, opcode costs, [block-level warming](#), and more.

- [Notes](#) by [Kev Wedderburn](#)

- [Post](#) by [Davide Crapis](#)

- [Notes](#) by [Kev Wedderburn](#)

- [Post](#) by [Davide Crapis](#)

Other

- [TEE Kettle](#) by [Poetic Technologies](#) is a community run forum for in-depth discussions on TEEs, including both secure hardware and software perspectives.

- [Post](#) by [Poetic Technologies](#)

- [Flashbots Intro To The Forum](#) by [@Quintus](#)

- [Post](#) by [Poetic Technologies](#)

- [Flashbots Intro To The Forum](#) by [@Quintus](#)

- [Pectra.wtf](#) by [Sébastien Rannou](#) is a collection of resources related to Pectra, with interactive charts for penalties and slashing.

- [Post](#) by [Sébastien Rannou](#)

- [Post](#) by [Sébastien Rannou](#)

- [DeFi's Hidden Choreography: From Protocol Ballet to Financial Chess](#)by [EigenPhi](#) summarizes their publications from last year related to searching, solving, and exploits.

- [Ethereum's Perfect Storm: How Centralization Threatens DeFi's Future](#) by [EigenPhi](#) highlights a collection of their posts from last year analyzing the builder market.

[Sign up here

](https://flashbots.net/the-mev-letter) if you'd like to get The MEV Letter straight to your inbox!

[Previous editions of The MEV Letter

](https://collective.flashbots.net/tag/the-mev-letter)[Join Flashbots

](https://www.flashbots.net/jobs)