

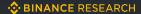
## Navigating Crypto: Industry Map

March 2025



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### **About the Industry Map**

The Industry Map provides an overview of the crypto ecosystem. In this report, we break down different verticals into subcategories and lay out a few projects in each of them. Additional details in terms of project descriptions and relevant metrics can be found in the following slides.

This map is compiled based on publicly available data, research, and qualitative analysis. It is not intended to be an exhaustive list of projects in the industry. Certain verticals, subcategories, or projects may or may not have been included, as we aim to share a variety of key leaders as well as emerging players. The projects showcased are mapped according to their primary use cases.

The mention of specific projects does not constitute an endorsement or recommendation by Binance.



### I. Infrastructure

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## **Infrastructure**Vertical Spotlights

We identified 5 key areas of innovation.



### Scalability and Fairness

As Layer-1 ("L1") chains see increasing adoption, many projects aim to make blockchains more scalable by batching transactions off-chain and more fair by implementing efficient distribution of Maximal Extractable Value ("MEV").



### Data Usability and Tooling

Data generated on blockchain networks is far from being fully usable by developers. Data querying and indexing services are key innovation areas to improve the current developer experience.



### Security and Privacy

The rising demand for network security and privacy has resulted in the emergence of projects aiming to prevent malicious data tracking, smart contract hacks, etc.



#### **Cloud Networks**

We see more projects focusing on providing users with access to web-based services that may entail storage, computing, and content delivery through decentralized infrastructure.



#### Connectivity

There are ongoing efforts to enhance L1 blockchains' connectivity and interoperability.

## **Infrastructure**Vertical Overview

Scalability and Fairness



Remote Procedure Call ("RPC") Provider

Data Usability and Tooling



Security and Privacy



**Cloud Networks** 



Cross-Chain Bridge

Connectivity



Rollup-as-a-Service



Data Indexing



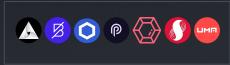
**Privacy Solution** 



Content Delivery Network ("CDN")



Oracle



Maximal Extractable Value ("MEV") Solution



Smart Contract Automation



Multisig Wallet



File Storage



Wireless Networks



#### Zero-Knowledge ("ZK"):

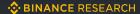
Protocols that execute bundled transactions off-chain and verify it on-chain using zero-knowledge proofs.

C	<b>Linea</b> is a zkEVM rollup solution developed by Consensys.
	<b>Polygon zkEVM</b> is an Ethereum L2 scaling solution that uses ZK proofs to offer validity and quick transaction finality.
	Scroll is a general-purpose zkEVM rollup solution.
<b>≈</b>	<b>StarkNet</b> is a decentralised, permissionless ZK rollup developed by Starkware.
•	<b>zkSync Era</b> is a ZK rollup solution addressing Ethereum scalability issues with minimized security compromises.

#### **Optimistic:**

Protocols that assume the validity of transactions and then combine them to execute off-chain.

	Arbitrum is the largest optimistic rollup network on Ethereum by TVL.
-	Base is an L2 network launched by Coinbase and built on the OP Stack.
B	Blast is an L2 network with a feature of native ETH and stablecoin yield.
8	Manta Pacific operates as an Optimistic L2 on Ethereum, capitalizing on Manta Network's Universal Circuits, with plans to transition to zkEVM.
3/1/2 3/1/2	Mantle is an optimistic L2 solution built on Ethereum.
M	<b>Mode</b> is an L2 built on the OP stack that rewards users for growing the network via new economic mechanisms.
OP	<b>OP Mainnet</b> is a fast, stable, and scalable L2 solution built by Ethereum developers, for Ethereum developers.
A	<b>Taiko</b> is a highly configurable, and permissionless (based) optimistic / ZK hybrid rollup which uses multi proofs.



#### **Rollup-as-a-Service:**

Solutions that prevent validators from unfairly profiting by including, excluding, or reordering transactions in a block.

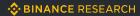
	Alchemy Rollups is a complete and comprehensive developer platform for rollup deployment.
	<b>Caldera</b> makes it easy to launch performant, customizable Arbitrum Orbit and OP Stack rollups.
8	<b>Launch</b> your own production-ready OP stack rollup in minutes on the only self-serve RaaS platform.
	AltLayer is a decentralized and elastic Rollup-as-a-Service protocol for developers to launch appchains.
0	Snapchain allows developers to leverage the power of ZK Rollups to scale on-chain game or DeFi apps cheaply and securely.
•	Saga is a Web3 scalability protocol for the automated deployment of dedicated blockspace.



#### **Maximal Extractable Value ("MEV") Solution:**

Solutions that prevent validators from unfairly profiting by including, excluding, or reordering transactions in a block.

<b>\$</b>	<b>Eden Network</b> is an optional, non-consensus-breaking, transaction ordering protocol for Ethereum blocks.
	Flashbots works on mitigating the negative externalities of current MEV techniques and avoiding the risks that MEV causes to state-rich blockchains.
Jito	<b>Jito Labs</b> builds high-performance systems to scale Solana and maximize validator rewards.
0	<b>Manifold</b> is a block builder for users and validators on the Ethereum blockchain, aiding in the creation of MEV for all stakeholders.
	<b>Shutter</b> aims to prevent front-running and malicious MEV by using threshold encryption.
9	<b>Skip Protocol</b> provides MEV infrastructure for blockchains and protocols such as Berachain, dYdX, Evmos, Injective, Juno, and Neutron.



#### Remote Procedure Call ("RPC") Provider:

RPC is the most direct interface through which developers can communicate with the blockchain system.

	<b>Alchemy</b> is a platform that enables developers to interact with the blockchain through API calls.
<b>©</b>	Ankr connects developers, dApps, wallets, exchanges, and all other use cases to blockchains via their RPCs and APIs.
Ø	<b>Blockdaemon</b> provides instant access to robust, customizable data sets with protocol specific endpoints.
<b>(4)</b>	<b>GetBlock</b> is a Blockchain-as-a-Service (BaaS) platform that provides a fast and easy API connection to full nodes from leading blockchain platforms.
Q	Infura offers a development suite which provides instant, scalable API access to the Ethereum and IPFS networks.
0	<b>Pocket Network</b> provides a decentralised RPC infrastructure with high uptime, cost-effective access, and low latency.
	QuickNode is a platform for developers to scale blockchain applications.

#### **Smart Contract Automation:**

Platforms that enable users to automatically execute smart contracts.

•	<b>Gelato Network</b> enables users to automate smart contract functions on Ethereum.
Z	OpenZeppelin Relay sends transactions via HTTP API, automating smart contract operations securely.

#### **Data Indexing:**

Platforms that provide network data indexing and querying services.

*	<b>0xScope</b> is a protocol that aims to standardize Web2 and Web3 data by building a knowledge graph.
Q.	<b>Covalent</b> is a unified API that brings data from different chains and other searchable endpoints.
6	<b>SubQuery</b> offers data indexing on Polkadot, Cosmos, Avalanche, Algorand, NEAR, Ethereum, and more.
9,	The Graph is an indexing protocol for querying networks like Ethereum.

#### **Security Solution:**

Protocols that contribute to the security of blockchains.

*	Forta is a real-time detection network for security and operational monitoring of blockchain activities.
G	<b>Harpie</b> is the first on-chain firewall that protects users from scams, hacks, and theft.
₩	ImmuneFi is a leading bug bounty platform.
Z	OpenZeppelin provides security products to build and operate dApps.
•	<b>Revoke.Cash</b> is a security management platform managing token approvals, protecting users against scams across 60+ networks.
4	<b>SharkTeam</b> is a leading Web3 security service provider that offers smart contract audits, chain analytics, and emergency response services.
Ø	QuantStamp provides security for hire, protecting over \$200B in digital asset risk from hackers.

### 

#### **Multisig Wallet:**

Cryptocurrency wallets that require two or more private keys to sign and send a transaction.

<b>@</b>	Safe is a platform to manage digital assets on Ethereum via smart accounts.
MSafe	<b>MSafe</b> developed the first multisig, non-custodial asset management solution for the Move ecosystem.
0	<b>Squads</b> is a multisig management protocol for Web3-native teams.

#### **Privacy Solution:**

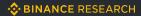
Projects that contribute to the protection of user privacy.

•	Anoma is an intent-centric, privacy-preserving protocol for decentralized counterparty discovery, solving, and multi-chain atomic settlement.
<b>\( \lambda \)</b>	Automata provides a blockchain-based authentication solution that secures access to accounts and protects users with an active defense.
h	<b>Hopr</b> is a data-centric privacy tool that prevents bots from accessing the metadata of wallets when users run transactions against a blockchain.
NYM	<b>Nym</b> is a decentralized and tokenized infrastructure that provides privacy from the network to the application layer.

#### **Content Delivery Network ("CDN"):**

CDNs are decentralized, distributed networks that provide fast delivery of internet content.

#	Fleek is an open-source edge computing platform providing dynamic or static content acceleration.
304	<b>Livepeer Network</b> is a protocol for developers who want to add live or on-demand video to their project.
	Media Network is a privacy-first and community-governed CDN.
<b>A</b>	<b>Meson Network</b> is a bandwidth marketplace using blockchain to replace traditional sales models.
∄	Theta Network is a blockchain infrastructure for video and media.
	<b>Script Network</b> is an EVM Layer 1 video protocol, infrastructure and live broadcasting network.

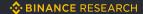


#### **Computing:**

Projects that provide users with access to computing services based on a decentralized infrastructure.

4	<b>Akash</b> Network is a decentralized cloud computing network that allows users to delegate spare GPU resources for purposes such as artificial intelligence.
A	<b>Aethir</b> provides distributed cloud compute infrastructure by aggregating enterprise-grade GPU chips for end users to access.
4	AIOZ is a decentralized network for AI computation, data storage, and seamless media and video streaming.
<b>€</b>	<b>Flux</b> provides a fully decentralized computational network providing simple compute power for databases or censorship resistant content delivery.
g	<b>Golem</b> Network is decentralized peer-to-peer marketplace for distributed computing resources.

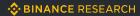
i	io.net offers a decentralized network that provides cost-efficient access to distributed cloud clusters optimized for machine learning and AI projects.
	<b>Render</b> Network is a decentralized cloud computing platform that allows anyone to share spare GPU resources and is typically used in rendering graphics.



#### Storage:

Projects that provide users with access to storage services based on a decentralized infrastructure.

<b>a</b>	Arweave offers permanent and decentralized storage in an open ledger.
<b>\$</b>	BNB Greenfield is a decentralized storage infrastructure that simplifies the process of storing and managing data access.
<del>f</del>	Filecoin is an decentralized, peer-to-peer cloud storage network for monetizing, storing, and retrieving data.
0	<b>Sia</b> is a decentralized cloud storage platform that enables trustless interactions between renters and hosts.
	<b>Storj</b> is a decentralized cloud storage solution prioritizing security and privacy.
•	<b>Zus</b> is a 3-layer security multi-cloud storage with no vendor lock-in and free egress.

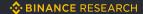


#### **Cross-Chain Bridge:**

Protocols that bridge tokens from one blockchain to another.

<b>8</b>	Across Protocol: Ethereum, Polygon, Base, zkSync, and 4 other chains
	Celer cBridge: Ethereum, BNB Chain, Arbitrum, Aptos, Sui, and 40 other chains
₹2. nergy	<b>Debridge:</b> Ethereum, BNB Chain, Polygon, Solana, and 8 other chains
<b>©</b>	Hop Exchange: Ethereum, Arbitrum, Base, and 6 other chains
	Multibit: Bitcoin, Ethereum, BounceBit, Solana, Polygon, and 4 other chains
<u> </u>	Orbiter Finance: Ethereum, Base, Arbitrum, 35 other chains
0	Portal Bridge: Ethereum, BNB Chain, and 23 other chains
<u></u>	Rhino.fi: Ethereum, BNB Chain, opBNB, 18 other chains

<b>♦</b>	<b>Stargate:</b> Ethereum, BNB Chain, Arbitrum, and 23 other chains
<b>₩</b>	<b>Squid Router:</b> Ethereum, BNB Chain, 68 other chains for V1, Ethereum, BNB Chain, 15 other chains for V2 (Beta)
<b>÷</b>	<b>Synapse:</b> Ethereum, BNB Chain, Arbitrum, and 18 other chains
	<b>zkbridge:</b> Ethereum, BNB Chain, opBNB, Scroll, and 6 other chains



#### Oracle:

Protocols that connect off-chain with on-chain data.

<b>A</b>	API3 is a first-party oracle network.
Ø	Band Protocol is a cross-chain data oracle platform that aggregates and connects real-world data to smart contracts.
0	<b>Chainlink</b> decentralized oracle networks provide tamper-proof inputs, outputs, and computations to support smart contracts.
P	<b>Pyth</b> delivers real-time, high-fidelity, high-frequency market data for DeFi applications.
	<b>RedStone Oracle</b> is a modular oracle delivering cost effective data for DeFi.
	<b>Supra Oracles</b> is a cross-chain oracle network that runs on Distributed Oracle Agreement.
	UMA's Optimistic Oracle allows contracts to request and receive data.

#### **Decentralized Wireless Networks:**

Protocols that leverage blockchain technology to offer seamless internet connection.

<b>Ø</b>	<b>Helium Mobile</b> is a decentralized wireless infrastructure project enabling to deploy and operate mobile networks and 5G.
<b>\$</b>	Karrier One is global carrier-grade mobile network running on decentralized telecommunications infrastructure that operates on Sui.
9	Roam by Metablox is a decentralized WiFi roaming network that enables global connectivity via its routers.
<b>©</b>	Wicrypt is a decentralized hotspot sharing and token mining network.
<b>x</b>	XNET is a decentralized, neutral host mobile network that leverages Wi-Fi Passpoint and 3GPP cellular technologies.
6	World Mobile Network is a decentralised and secure blockchain platform that enables a new generation of wireless networks.



### II. Decentralized Finance ("DeFi")



# **DeFi**Vertical Spotlights

#### We identified 4 key areas of innovation.



#### Issuance

We see the emergence of a more diverse suite of financial products in the DeFi space, such as synthetic assets, options, and structured products.



#### Liquidity

Liquidity staking, restaking and collateralized debt positions ("CDPs") are becoming more prominent, exposing users to a variety of on-chain liquidity opportunities.



#### **Trading**

More diverse financial products are being traded on decentralized exchanges ("DEXs").



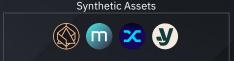
#### **Risk Management**

There are more projects focusing on providing users with monetary protection and other security measures against hacks, scams, and technical loopholes.



### DeFi Vertical Overview





#### Liquidity



#### Restaking



#### **Trading**



#### Other



#### **Options/Structured Products**



#### Liquid Staking



#### Liquid Restaking



#### Prediction Market

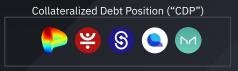


#### Launchpad

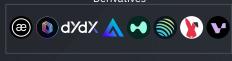


#### Yield





#### Derivatives



#### Insurance



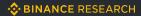
# **DeFi**Subcategory Description

**Synthetics:** Protocols that incorporate cryptocurrencies and traditional derivative assets, essentially tokenized derivatives.

	Alchemix is a DeFi protocol that allows the creation of synthetic tokens that represent the future yield of a deposit.
•	Metronome allows users to post multi-collateral assets from their portfolio and create a multitude of synthetic assets.
×	Synthetix is the largest derivatives liquidity protocol, allowing users to trade a wide array of derivatives in DeFi.
<b>3</b>	Youves is a decentralized DeFi platform that facilitates the creation and management of synthetic assets.

**Options/Structured Products:** Yield optimizers, yield tranching, automated LP managers, options trading, etc.

<b>®</b>	Aevo is a derivatives L2 focusing on options and perpetuals trading.
	<b>Deri Protocol</b> is a derivatives protocol providing futures, options, powers, and gamma trading products.
49	Katana is a yield generation protocol on Solana designed to generate sustainable yield from automated option strategies.
4	Lyra Finance is a self-custodial exchange operating on its own L2, Lyra Chain, providing perpetuals, options and spot trades.
$\bigcirc$	Thetanuts Finance offers on-chain options and automated strategies for users to earn and optimize their yields.
<b>&amp;</b>	Typus Finance is a yield infrastructure that offers options and options vault on Sui Network.



Yield: Projects providing yield strategies such as tokenized yield, yield boosting, etc

<b>a</b>	Aura is a protocol built on Balancer to provide maximum incentives to Balancer liquidity providers and BAL stakers (into veBAL).
C	Convex allows Curve liquidity providers to earn trading fees and claim boosted CRV without locking CRV.
( <del>I</del> )	Hyperlock is a yield and metagovernance protocol built on Thruster, providing boosted rewards to Thruster LPs and THRUST stakers.
<b>✓</b>	IPOR fixes lending and borrowing rates using an interest rate swap with the liquidity pool as a contract counterparty.
<b>©</b>	Magpie is a Multi-chain DeFi platform providing Yield & veTokenomics boosting services
•	Pendle is a protocol that enables the trading of tokenized future yield on an AMM system.



**Lending:** Protocols that allow users to lend and borrow assets.

A	Aave is the largest decentralized liquidity market that allows users to borrow and lend assets, earning interest on their deposits.
•	Compound is an algorithmic, autonomous interest rate protocol built for developers to unlock open financial applications.
<b>•</b>	<b>Fluid</b> is a decentralized lending platform with innovative features including its liquidity layer, automated limits, lending and vault protocols, robust oracle system, and DEX protocol
*	JustLend is a decentralized money market on TRON that allows users to lend, borrow, and earn interest on their deposits.
K	Kamino Finance is a DeFi protocol on Solana offering lending, borrowing, and liquidity provision on a single platform.
×	Morpho is a peer-to-peer modular lending protocol with isolated lending markets.
*	<b>Spark</b> is a lending platform that leverages a credit line from MakerDAO to offer predictable rates for DAI.
w	<b>Venus</b> is an algorithmic money market protocol on BNB Chain, for lenders and borrowers with borderless stablecoins.



**Liquid Staking Providers:** Protocols that allow users to unlock liquidity through LSDs while keeping networks secure.

<b>③</b>	<b>Binance</b> provides users who stake ETH and SOL with WBETH and BNSOL, which is yield-bearing in nature.
0	Coinbase allows users to stake ETH for cbETH through their wallet.
Jito	<b>Jito</b> is a liquid staking protocol on Solana offering yield through SOL staking and MEV strategies.
<b>6</b>	<b>Lido</b> is a liquid staking protocol for proof-of-stake cryptocurrencies like ETH and MATIC.
	<b>Marinade</b> is a Solana liquid staking platform that delegates to 100+ of the best-performing validators.
Ø	Rocket Pool is a decentralised liquid staking protocol for the Ethereum (ETH) ecosystem.
(1)	Sanctum is a liquid staking platform on Solana providing a unified liquidity layer for SOL LSTs.

8	<b>Stader</b> is a multichain liquid staking protocol, supporting Ethereum, BNB Chain, Polygon, and more.
	<b>Swell</b> is a non-custodial ETH liquid staking protocol.



Collateralized Debt Position ("CDP"): Protocols that use collaterals to mint stablecoins.

<b>!</b>	crvUSD is a collateralized-debt-position (CDP) stablecoin pegged to the US Dollar.
<b>2</b>	JustStables enables the minting of USDJ on TRON with TRX as collateral.
<u>\$</u>	ListaDAO is a MakerDAO fork on BNB Chain which enables the minting of lisUSD against crypto assets like BNB, ETH, LSTs, LRTs,, and stablecoins.
<u> </u>	<b>Liquity</b> enables the generation of the stablecoin LUSD against ETH as a collateral.
M	MakerDAO enables the generation of the largest decentralized stablecoin DAI against crypto collateral assets.

**Restaking:** Protocols that leverage staked assets to secure a designated network of participants.

ß	<b>Eigenlayer</b> is a protocol that enables staked ETH or LSTs to extend cryptoeconomic security to Actively Validated Services (AVS) on the network in return for additional yield.
1	Karak enables users to repurpose their staked assets to extend Ethereum as well as other trust networks' security to other applications.
P.	<b>Picasso</b> is the first censorship-resistant, trust-minimized interoperability solution (Cross-Ecosystem IBC Hub), and also a platform for the first Generalized Restaking Layer.
5	<b>Solayer</b> is a shared validator network that secures other Solana-integrated systems.
	Symbiotic is a generalized shared security system enabling decentralized networks to bootstrap powerful, fully sovereign ecosystems.
9	Babylon facilitates BTC staking, allowing BTC holders to participate in securing other blockchain networks without smart contracts or bridging.



#### **Liquid Restaking:** Protocols that enable liquid positions of restaked assets.

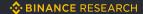
Eg .	<b>Ether.fi</b> is a liquid restaking platform that allow users to deposit ETH or LSTs which will be natively restaked on Eigenlayer for yield, providing a liquid restaking token (eETH) in return.
*	Kelp DAO provides a liquid restaking token (rsETH) solution for Eigenlayer on Ethereum.
<b>6</b>	Mellow Protocol enables permissionless LRT creation allowing for unlimited risk profiles by working with diverse set of AVSes and operators.
<b>@</b>	Puffer Finance is a Native Liquid Restaking Protocol (nLRP) built on the innovative EigenLayer, offering a dynamic staking platform for Ethereum users.
<b>%</b>	Renzo is a Liquid Restaking Token (LRT) and Strategy Manager for EigenLayer.
<b>%</b>	Swell is a liquid staking / restaking provider, allowing users to earn yield without the constraint of locking up capital.



**Spot Decentralized Exchange ("DEX"):** A peer-to-peer marketplace for trading various assets in a non-custodial manner.

	<b>Uniswap</b> is the largest DEX by volume, allowing users to swap, earn, and build on its platform.
<b>\$</b>	Curve is a multi-chain AMM-based DEX that allows users to trade at the lowest slippage.
8	PancakeSwap is the leading decentralized exchange on BNB Chain.
	Balancer is an automated portfolio manager and trading platform on Ethereum.
9	<b>Cetus</b> is a DEX and concentrated liquidity protocol focusing on Move-based ecosystems like Aptos and Sui.
(F)	Raydium is an on-chain order book AMM on Solana.
<b>(5)</b>	<b>STON.fi</b> is a decentralized AMM built on the TON blockchain providing virtually zero fees, low slippage, an extremely easy interface, and direct integration with TON wallets.
<b>&gt;</b>	SushiSwap is a fork of Uniswap, functioning as a community-driven DEX for traders and liquidity providers.

	SUNSwap is a TRON-based decentralized trading protocol for automated liquidity provision
×	Thruster is the leading DEX and core liquidity layer on Blast L2.



**Prediction Market:** Protocols that enable users to wager, bet, and buy in future outcomes.

	Polymarket is an information markets platform that lets users trade on the world's most highly-debated topics.
٥	Augur is a prediction market allowing users to trade world outcomes including sports, crypto, politics, and current events.
<u> </u>	Azuro is an infrastructure/liquidity layer for on-chain predictions.

**Derivatives:** Protocols that enable users to trade perpetual futures contracts with leverage

æ	Aevo is a derivatives L2 focusing on options and perpetuals trading.
	Drift is an onchain spot and perpetual trading platform on Solana.
dγdΧ	dYdX is an open perpetual DEX allowing for margin trading on perpetual contracts.
<b>A</b>	GMX is a decentralized spot and perpetual exchange providing low swap fees, zero price impact trades, and leverage positions.
•	Hyperliquid is an orderbook perpetual DEX operating on its own Layer 1, the Hyperliquid L1.
	Jupiter is a DEX aggregator on Solana which offers a perpetual trading product.
<b>(8)</b>	RabbitX is a global permissionless perpetuals exchange powered on Starknet.
v	<b>Vertex</b> is a vertically-integrated DEX on Arbitrum featuring spot, perpetual, and integrated money markets.



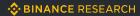
# **DeFi**Subcategory Description

#### Security and Stress Testing: Modules that stress test or offer other security measures to protocols.

	Certik is a security-focused audit and ranking platform.
<b>\$</b>	Chainalysis provides blockchain analysis for government agencies, projects, and financial institutions.
<b>9</b>	<b>Gauntlet</b> is a financial modeling platform that optimizes capital efficiency, ensures the systemic health of protocols, and mitigates platform risks.
Z	<b>Zokyo</b> is a Web3 firm that builds, secures, and funds crypto and DeFi projects.

#### Launchpad: Composable modules for token issuance, liquidity, etc.

POUR	Four.meme is a streamlined, low-cost memecoin launchpad that enables token deployment on BNB chain.
<b></b>	PinkSale is a decentralized launchpad that allows users to launch their own token and create their own initial token sale
<b>©</b>	Pump.fun is a token launchpad that allows users to deploy tokens on Solana without having to seed liquidity, using bonding curves.
0	<b>Team Finance</b> is a toolkit that helps founders create tokens to raise funds from investors.
<b>&gt;</b>	UNCX Network is a one-stop-shop for DeFi solutions and services, including token lockers, liquidity locking, minting, crowdfunding, and more.



# **DeFi**Subcategory Description

**Insurance:** Protocols that aim to provide users with insurance coverage to hedge risks.

*	Nexus Mutual is the largest decentralized insurance protocol that covers against smart contract failures.
♦	InsurAce is a leading multi-chain DeFi insurance protocol that is the first to issue cross-chain portfolio-based covers.
<u></u>	Solace is a decentralized insurance protocol that provides portfolio coverages for individuals, protocols, and DAOs across multiple chains.

# III. Non-Fungible Token ("NFT")



### NFT Vertical Spotlights

#### We identified 3 key areas of innovation.



#### Marketplace

We see the emergence of NFT marketplaces targeting a variety of use cases, such as chain-specific listings, aggregators, and thematic curations. Users gain access to a wider range of buyer experiences.



#### **Financialization**

There are more diverse NFT-based financial products and services, such as staking, lending, derivatives, fractionalization, etc. Users are exposed to liquidity opportunities for their previously illiquid NFT assets.



#### Services

An increasing number of projects are helping users improve their experiences purchasing NFTs and managing portfolios. Other projects provide services to help creators launch, secure, and store their NFTs more seamlessly.

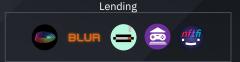


### NFT Vertical Overview

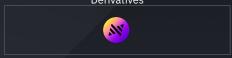




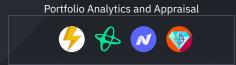
#### **Financialization**



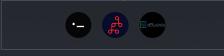
#### Derivatives



#### **Services**



#### Launchpad



#### Curated Marketplace



FUT (



#### Fractionalization







#### Options





#### Membership and Content Gating







#### Safety







#### Aggregator























#### Storage





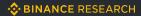




## NFT Subcategory Description

**Open Marketplace:** Platforms that allow for any NFTs from any brands to be sold.

BLUR	<b>Blur</b> is a NFT marketplace and aggregator designed for pro traders offering 0% marketplace fees.
<b>X</b>	Immutable X is a NFT marketplace built on the Immutable X blockchain.
ME	Magic Eden is a multichain NFT marketplace with 0% listing fees.
•	<b>LooksRare</b> is a decentralized NFT marketplace offering community rewards for participating.
<b>2</b>	OpenSea is a digital marketplace for crypto collectibles and non-fungible tokens.
•	Pallet is an NFT marketplace built on the Sei Network.
)s(	Sudoswap is an AMM protocol enabling NFT-to-token swaps and vice versa.
1	<b>Tensor</b> is an advanced NFT marketplace and aggregator on Solana.
<u>\$</u>	<b>Unisat</b> is a marketplace on Bitcoin supporting the trading of Ordinals and other Bitcoin assets.



# Subcategory Description (cont.)

**Aggregator:** Platforms that allow users to easily trade NFT collections from different marketplaces in one central destination.

BLUR	<b>Blur</b> is a NFT marketplace and aggregator designed for pro traders offering 0% marketplace fees.
<b>@</b>	<b>Opensea Pro</b> , formerly known as Gem, is a low-fee NFT marketplace aggregator. Gem was acquired by OpenSea.
<b>@</b>	Element is a community-driven, aggregated marketplace for NFTs across 15 chains.

## **Curated Marketplace:** Selective platforms that focus on a certain type of NFT, aesthetic, or set of values.

<b>A</b> • • • • • • • • • • • • • • • • • • •	Foundation is a curated, decentralized NFT marketplace.
TOZ FU <u>T</u>	tofuNFT is a NFT marketplace focused on GameFi.
	<b>Zora</b> is an NFT marketplace for creators and brands, allowing the minting and trading of NFTs.

# NFT Subcategory Description (cont.)

### **Lending:** Protocols that allow users to collateralize NFTs for loans.

	BendDAO is a decentralized peer-to-pool-based NFT liquidity protocol.
BLUR	<b>Blend</b> by Blur enables NFT owners to borrow ETH against their assets with a buy now, pay later feature for NFT purchases.
	<b>JPEG'd</b> is a decentralized lending protocol on the Ethereum network that enables holders to borrow using NFTs as collateral.
<u></u>	MetaStreet is a liquidity scaling protocol for NFT credit markets.
nftfi	NFTfi is a peer-to-peer lending protocol.



# Subcategory Description (cont.)

#### **Fractionalization:**

Protocols that allow users to create and trade fractionalized NFTs.

*	NFTFY offers tools for NFT fractionalization and a marketplace of fractionalized NFTs.
<u>a</u>	Floor Protocol allows people to fractionalize their NFTs into micro-tokens called μ-Tokens.
to to	Fractional increases accessibility to popular NFTs by enabling collective ownership.

#### **Options:**

Protocols that allow NFT holders to earn yields on their NFTs and engage in options trading.

2	<b>Hook</b> is an NFT-native options protocol.
<b>&amp;</b>	Wasabi is an Ethereum-based, decentralized, NFT option trading protocol.

#### **Derivatives:**

Protocols that allow users to trade NFT derivatives.



**Nftperp** is a perpetual futures DEX for NFTs.

### **Buy Now, Pay Later ("BNPL"):**

Protocols that allow users to buy NFTs and pay for them later.

BLUR	<b>Blend</b> by Blur enables NFT owners to borrow ETH against their assets with a buy now, pay later feature for NFT purchases.
6	Cyan offers buy now, pay later for NFT purchases with a 25% down payment.
	<b>Teller</b> is an oracle-less lending protocol that has a buy now, pay later system with as little as a 25% down payment.

# Subcategory Description (cont.)

### **Rental:**

Protocols that allow users to rent NFTs.

DOUBLE	Double Protocol is an NFT rental protocol.
<b>@</b>	<b>reNFT</b> is a multi-chain NFT rental protocol that enables uncollateralized renting, lending, and reward sharing.
•	<b>Taker Protocol</b> is a platform that allows users to rent NFTs based on their risk profiles.



# Subcategory Description (cont.)

### **Portfolio Analytics and Appraisal:**

Tools that analyze or appraise NFTs.

<del>/</del>	<b>CryptoSlam</b> is the leading NFT aggregator, collecting and analyzing data for millions of NFTs across 15+ Blockchains.
€	Nansen provides users with crypto and NFT insights through a set of blockchain analytics tools.
N	NFTGo is an NFT data aggregator with analytic tools.
<b>**</b>	Rarity Sniper is a platform allowing users to track the rarity of NFT collections.

### **Membership and Content Gating:**

Tools that gate access to membership or content using NFTs.

4	Audius is a music streaming and sharing platform that puts power back into the hands of content creators.
	<b>Collab.land</b> is an NFT token gating bot for Telegram and Discord with over 8M verified wallets.
	<b>Moongate</b> is a no-code toolkit to create and adopt NFT-gated memberships for brands and events.

### **Storage:**

Solutions for storing NFT data.

	<b>Filebase</b> is a storage platform that allows on-ramp to IPFS and decentralized file storage networks.
NFT STØRAGE	<b>Nft.storage</b> is a long-term storage service designed for off-chain NFT data powered by IPFS and Filecoin.
	<b>Pinata</b> is an IPFS solution for creators and developers.

# Subcategory Description

### Launchpad:

Platforms for projects to launch their own NFTs.

•	<b>Dropspace</b> is a full-service minting platform that provides the technology to help founders launch their NFTs.
B	Mintbase enables users to build their own minters, markets, and NFT redeeming systems.
(S) Nationalists	NFT Launch is a launchpad for upcoming NFT projects.

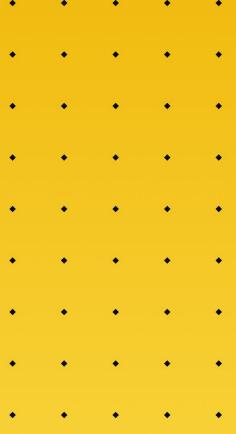
### **Safety:**

Modules that offer security measures to protocols.

	Doppel is an IP protection platform for NFTs.
öptic	<b>Optic</b> monitors blockchains to reveal the origins of NFTs and how they have been reimagined, remixed, or copied.
Y	Yakoa is an NFT fraud detection network.



# **IV.** Gaming



# Gaming Vertical Spotlights

## We identified 4 key areas of innovation.



#### **Games**

The question remains: What is the best way to most seamlessly implement crypto-based in-game economies without impacting gamer incentives in an unsustainable way?



## Game Development

We see the emergence of projects in the form of game studios, initial game offerings ("IGOs") launchpads, and developer kits that aim to help creators smoothly develop and launch their games with crypto-based in-game economies.



## Player Experience

There are more diverse products and services that aim to improve the player experience by lowering the barriers to exploring and onboarding in crypto-based games.

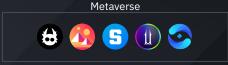


## **Analytics**

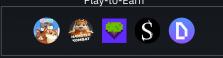
Developments in analytics tools continue to remain pivotal for game developers to make informed decisions.

## Gaming Vertical Overview





Play-to-Earn



### Game **Development**







#### Launchpad



**Player Experience** 



#### Gaming NFT Marketplace



#### **Analytics**





# **Gaming**Subcategory Description

#### **Metaverse:**

Virtual worlds where users can engage in a variety of immersive virtual experiences.

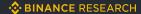
8	Otherside is a gamified, interoperable metaverse currently under development that blends MMORPG mechanics with web3-enabled virtual worlds.
	Decentraland is a 3D virtual world where users can create and monetize content.
<u>5</u>	The Sandbox is currently the largest metaverse project where players can build, own, and monetize their gaming experiences.
	Illuvium is the world's first Interoperable Blockchain Game (IBG) including an open-world exploration game, industrial city builder, and autobattler on Ethereum.
<b>©</b>	StarryNift is an AI-powered co-creation metaverse, offering users a 3D virtual experience for play, creation, and socialization.



### **Play-to-Earn:**

Games where users can monetize their gaming experiences in the form of cryptocurrencies.

	Catizen is a hypercasual play-to-earn game on Telegram where players manage a virtual cat city.
HANSTER KOMBAT	Hamster Kombat is a tap-to-earn game on Telegram involving strategic decisions and the management of a virtual crypto exchange.
<u> </u>	<b>Pixels</b> is a Web3 social gaming platform on the Ronin Network, blending farming, exploration, and community building in an open-world universe.
S	<b>Seraph</b> is an action role-playing game (ARPG) with hack-and-slash combat mechanics, allowing for item customization tailored to user playstyles.
D	World of Dypians is a massive multiplayer online role-playing game (MMORPG) set in a vast digital realm.



#### **Game Studio:**

Studios that specialize in developing crypto-based games. The games listed are not meant to be exhaustive.

◎ Dapper	Dapper: CryptoKitties, NBA Top Shot, NFL All Day, UFC Strike, etc.
	Gala Games: Champions Arena, Eternal Paradox, Meow Match, etc.
	Immutable: Gods Unchained, Guild of Guardians, Shardbound, etc.
<del></del>	Nakamoto Games: Brawler Master, Naka Connect, Naka Rider, etc.
4	<b>Parallel Studios</b> is a sci-fi game studio known for the Parallel TCG, the AI-driven simulation game Colony, and the extraction shooter Sanctuary.

#### Launchpad:

Platforms that provide services to creators to launch games with crypto-based in-game economies.

Game storter	<b>Gamestarter</b> is a Web3 gaming hub pioneering a dynamic ecosystem to empower the next wave of gaming.
<b>G</b> F	<b>Gamefi</b> is a game-dedicated launchpad that conducts Initial Game Offerings (IGO) for game projects to get first access to game assets and engage with the GameFi community.
•	<b>TrustPad</b> is a decentralized multi-chain fundraising platform enabling projects to raise capital and promise safety to early stage participants.
Ø	<b>Seedify</b> is a leading Web3 Gaming Incubator and Launchpad for Web3 projects focusing on innovative technologies such as DeFi, AI, Big Data, NFTs and Web3 Gaming.
<b>Ø</b>	<b>Enjinstarter</b> is a metaverse and Web3 gaming launchpad offering advisory, IDOs, incubation, and fundraising services for projects.

#### **Toolkit:**

Tools for incorporating crypto-based economies into games.

CAPY	CARV Protocol is a modular data layer that facilitates data exchange and value distribution across the gaming and AI sectors.
	<b>Enjin</b> offers a suite of integrated products that make non-fungible tokens (NFTs) easy for individuals, businesses, and game developers
<b>©</b>	Moralis Unity SDK provides full wallet and blockchain integration for Unity Games.
Ē	Mud is an engine for building multichain autonomous 2D worlds.



### **Game NFT Marketplace:**

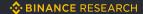
Platforms for gamers to trade in-game items in the form of NFTs.

<u> </u>	<b>AirNFTs</b> is a cross-chain gaming NFT marketplace on BNB Chain, Fantom, Polygon and Ethereum.
<b>D</b>	Atomic Hub is an NFT marketplace on Wax, Immutable and EOS networks.
D	dMarket enables secure buying, selling, and trading of in-game NFTs.
	Immutable Marketplace is a leading NFT marketplace on Immutable X for NFT and blockchain gaming.
	<b>TokenTrove</b> is a premier NFT marketplace on Immutable X.

#### **Gaming Guild:**

Gamer communities that collectively monetize the play-to-earn model and lower its entry barrier.

AG	<b>Avocado DAO</b> focuses on investing in NFT assets within games and emergent metaverses, NFT platforms, and P2E games.
රව්	Good Games Guild is a leading gaming hub for blockchain-based games.
	<b>GuildFi</b> is an interconnected Web3 ecosystem of games, NFTs and communities across the metaverse.
•	Merit Circle is A DAO developing a Web3 ecosystem for gaming, offering tools like Beam, a specialized blockchain for gaming, and various applications for enhanced gaming experiences.
( <del>V</del>	<b>Yield Guild Games</b> is a play-to-earn gaming guild for investing in non-fungible tokens (NFTs) used in virtual worlds and Web3 games.



# Gaming Subcategory Description

### **Gaming Analytics:**

Platforms that provide data insights on the Web3 gaming landscape.

	Chainplay.GG is a one-stop hub for all things blockchain gaming.
<b>6</b>	DappRadar is an analytics platform that offers the latest data on various Dapps.
	<b>P2E Analytics</b> is an NFT gaming research hub that provides on-chain and off-chain data on Web3 games.



## V. Stablecoins



# **Stablecoins**Vertical Spotlights

## We identified 3 key areas of innovation.



### Stablecoin Infrastructure

Payment infrastructure allows a system to handle increasing transaction volumes efficiently without compromising speed, cost, or security. Key innovations include L2 rollups and validity proofs that offload computation from base layers, asynchronous settlement models that decouple transaction finality from execution to enhance throughput, and interoperable payment networks.



### **Types of Stablecoins**

Stablecoins maintain their value through mechanisms like fiat collateralization, crypto-backed reserves, and algorithmic stabilization. Accelerating innovations include RWA-backed stablecoins for enhanced stability, hybrid algorithmic models integrating AI-driven risk management



### **Applications**

Stablecoins serve as the foundation for DeFi, enabling lending, borrowing, and cross-border payments without traditional banking intermediaries.



## **Stablecoins** Vertical Overview

**Stablecoin Infrastructure** 



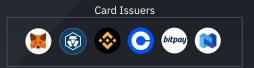
Stablecoin Rails/Issuers

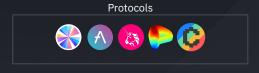
**Types** 



Crypto-Backed **S**§ (2) **S** \(\psi\) Algorithmic

**Applications** 





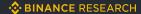


### **Stablecoin Rails/Issuers:**

Stablecoin rails comprise the technology, protocols, and compliance systems enabling the issuance, management, and secure transfer of stable, asset-backed cryptocurrencies.

0	<b>Paxos</b> is a regulated blockchain infrastructure platform that powers real-time payments, asset tokenization, and secure digital transactions through its PayFi solution.
0	<b>Conduit</b> is a payments platform that aims to remove the complexity of accessing payments for financial platforms in a scalable way that makes better financial products more accessible to everyone.
S	<b>Stripe</b> is a payment platform that provides a secure and user-friendly way to accept payments online.
•	<b>Brale</b> is a decentralized finance (DeFi) platform that offers innovative solutions for crypto-native treasury management, helping organizations optimize their digital asset operations.
M^0	<b>M^0</b> powers the first open federation of cryptodollar issuers, built on a decentralized architecture and best-in-class collateral design.



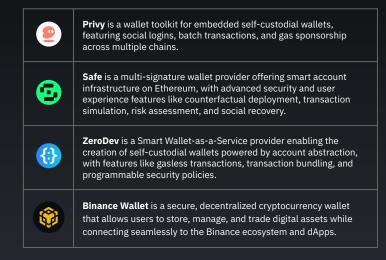


# **Stablecoins**Subcategory Description

#### **Wallet Service Providers:**

Essential infrastructure for managing digital assets, with account abstraction, social logins, gasless transactions, and one-click solutions.

<b>©</b>	<b>Circle</b> provides programmable wallets with flexible and secure infrastructure for blockchain applications, enabling the creation of in-app wallets for users.
•	<b>Coinbase Smart Wallet</b> offers seamless onboarding directly in the browser without requiring downloads, featuring passkey onboarding, the ability to use exchange balances, and gasless transactions through account abstraction.
<b>⊙</b> Dfns	<b>Dfns</b> provides a wallet-as-a-service platform for organizations to easily create, embed, and manage digital asset wallets.
<b>(</b>	<b>Fireblocks</b> Wallet-as-a-Service (WaaS) is an API-based solution featuring highly secure MPC wallets, allowing users to create, manage, and secure wallets for any number of users with ECDSA and EdDSA signatures.
<b>(1)</b>	Magic provides SDKs that enable passwordless authentication, non-custodial wallets, customizable wallet UI, and compatibility with 30+ blockchains for any web or mobile application.
	Particle Wallet is a modular, customizable universal wallet for facilitating account interaction with Web2 social logins and Web3 wallets across multiple blockchains.





#### Fiat Collateralised:

Fiat-collateralized stablecoins are digital assets backed 1:1 by traditional currency reserves held in banks or financial institutions, ensuring price stability and easy redemption.

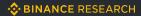
<b>4</b>	<b>Tether</b> is pegged to the USD and backed by cash reserves, cash equivalents, and other assets held by Tether Ltd.
(\$)	<b>USDC</b> is a fully regulated stablecoin issued by Circle and backed 1:1 by USD held in U.S. bank accounts.
<b>(</b>	TUSD is a transparent, independently audited stablecoin backed by USD held in escrow accounts.
<b>(€)</b>	EURC fiat-backed stablecoin pegged to the Euro, ensuring 1:1 reserves held in European banks.



### **Crypto-Backed:**

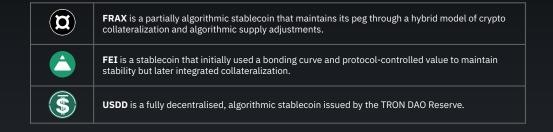
Crypto-backed stablecoins are digital assets collateralized by cryptocurrencies, typically over-collateralized to account for volatility, with smart contracts managing reserves and liquidations to maintain price stability.

S	USDS is a decentralized stablecoin issued by MakerDAO, backed by over-collateralized crypto assets like ETH and USDC, with smart contracts managing stability.
Sign	<b>sUSD</b> is a crypto-backed stablecoin issued by Synthetix, collateralized by SNX tokens and governed through a decentralized protocol.
₹USD	<b>LUSD</b> is a fully decentralized stablecoin from Liquidity, backed solely by ETH and maintaining its peg through an algorithmic borrowing and redemption mechanism.
3	RAI is a non-pegged, ETH-backed stable asset that self-stabilizes through an autonomous on-chain control mechanism without relying on fiat.
₩	VAI is a crypto-backed stablecoin issued by Venus Protocol, backed by a basket of cryptocurrencies and used within the Binance Smart Chain DeFi ecosystem.
( <u>\(\delta\)</u>	<b>USDe</b> is a synthetic dollar protocol that creates a decentralized stablecoin by using a delta-neutral strategy, where it holds staked ETH while simultaneously shorting an equivalent amount in perpetual futures markets to hedge against price volatility.



### **Algorithmic:**

Algorithmic stablecoins use smart contract-driven mechanisms to regulate supply and demand, maintaining price stability without direct collateral by expanding or contracting the token supply based on market conditions.





#### **Card Issuers:**

Financial institution or company that provides users with cryptocurrency-linked cards, enabling them to spend digital assets at merchants that accept traditional payment methods, often offering rewards and benefits in cryptocurrency.

<b>*</b>	Binance Card allows users to spend cryptocurrencies and earn cashback in digital assets.
	<b>Crypto.com Card</b> lets users spend cryptocurrencies directly, with rewards and cashback on purchases.
0	Coinbase Card allows users to spend crypto and earn rewards in the form of crypto cashback.
bitpay	<b>Bitpay Card</b> is a prepaid card that lets users convert and spend cryptocurrencies for everyday transactions.
(8)	<b>Nexo Card</b> is a crypto-backed card that enables users to spend against the value of their crypto assets.
	<b>Metamask Card</b> is a Mastercard payment card that allows users to spend crypto directly from their self-custodial Metamask wallets.



#### **Protocols:**

DeFi protocols are decentralized financial systems built on blockchain technology, offering services like lending, borrowing, trading, and liquidity provision without relying on traditional financial intermediaries, enabling users to transact directly with smart contracts.

	<b>Sky</b> focuses on decentralized finance solutions that integrate blockchain technology with digital assets to provide enhanced financial products and services.
A	<b>Aave</b> is a decentralized lending protocol enabling users to borrow and lend a variety of cryptocurrencies without intermediaries, featuring interest rate models and collateral options.
	<b>Uniswap</b> is a decentralized exchange (DEX) that allows users to swap tokens directly on the blockchain using an automated market maker (AMM) model.
<b>&gt;</b>	<b>Curve</b> is a decentralized exchange optimized for stablecoin trading, offering low slippage and efficient swaps between stablecoins and other assets.
<b>(</b>	<b>Convex</b> enhances yield farming by allowing users to stake their Curve LP tokens and earn additional rewards without needing to lock assets in the Curve protocol directly.



### Payroll:

Stablecoin-powered payroll systems enable instant, low-cost cross-border salary payments by leveraging blockchain technology, reducing reliance on traditional banking and minimizing currency conversion fees.

d.	<b>Deel</b> crypto payroll uses cryptocurrencies as a means of payment of employee wages.
<b>2</b>	<b>Rise</b> makes it easy for you to hire, onboard, and pay your global team in fiat or crypto, while ensuring full tax compliance.
9	Belo allows users to send money abroad or to local accounts via crypto.l
Ø	<b>XLM's</b> disbursement platform enables fast, low-cost cross-border payments by leveraging blockchain technology to distribute funds efficiently in stablecoins or local currencies.



## VI. RWAs

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# Real-World Assets ("RWA") Vertical Spotlights

### We identified 2 key areas of innovation.



#### **RWA Rails**

These projects establish the regulatory, technical, and operational infrastructure that enables real-world assets to be seamlessly integrated into crypto. Innovations in programmable compliance, automated risk assessment, and trust-minimized settlement are driving greater efficiency, security, and adoption across global markets.



### **Physical Tokenization**

Physical tokenization refers to the process of converting real-world assets such as real estate, commodities, and infrastructure into digital tokens on a blockchain.



### **Digital Tokenization**

Digital tokenization refers to the process of converting digital assets, such as bonds, equities, and derivatives, into blockchain-based tokens that represent ownership or rights. It involves creating smart contracts, ensuring secure transactions, and facilitating the transfer of these digital assets within decentralized ecosystems.

## Real-World Assets ("RWA") Vertical Overview

**RWA Rails** 



Securitization



**Physical Tokenization** 



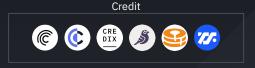
Commodities

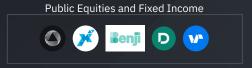


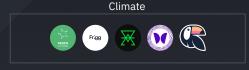
Supply Chain

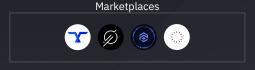
**Digital Tokenization** 











#### **Blockchains:**

Permissioned or permissionless blockchains tailored specifically for RWAs.

<b>\$</b>	<b>Ethereum</b> incorporates the ERC3643 token standard for permissioned security tokens, enabling regulatory-compliant issuance, transfer, and management of RWAs.
	MANTRA is an RWA-focused L1 blockchain capable of adherence to real world regulatory requirements.
2	<b>Plume</b> is a modular L2 blockchain for RWAs that simplifies onchain asset deployment while fostering a composable ecosystem through DeFi applications.
P	Polymesh is an institutional-grade permissioned blockchain built specifically for regulated assets.
<b>②</b>	<b>re.al</b> is a permissionless, modular L2 solution built using Arbitrum Orbit, with a focus on tokenized real-world assets.
8	<b>Stellar</b> is a L1 blockchain for efficient payments and asset tokenization, offering built-in features and controls for quick and cost-effective real world asset tokenization.



#### **Securitization:**

Converting real-world assets into legally compliant digital securities.

	<b>Bitbond</b> is a bank-grade tokenization platform for regulated financial institutions and large issuers.
•	<b>Tokenise.it</b> is a digital fundraising platform that enables German and Austrian startups to raise capital by issuing virtual shares, known as GmbH tokens
<b>₹</b>	<b>Polymath</b> is an institutional-grade platform for real-world asset digitization, providing tools for the entire token lifecycle, from issuance and management to investor onboarding.
<u>(S)</u>	<b>Securitize</b> is a fully digital, regulatory compliant platform for issuing and trading digital asset securities.
t0	<b>tZERO</b> is a blockchain-based platform offering transformative market-based solutions such as capital raising, digitizing of public and private assets, and secondary market trading.
CRE	<b>Credix</b> is s a decentralized credit marketplace that connects global investors with fintech lenders in emerging markets, facilitating the origination, securitization, and tokenization of debt instruments to provide efficient capital access for high-growth regions.



#### **Regulatory:**

Services to ensure investor and issuer compliance.

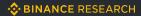
<b>②</b>	Quadrata is a Web3 identity solution providing blockchain-verified KYC and AML screening for users to participate in DeFi in a privacy-preserving and legally compliant way.
<b>***</b>	<b>Tokeny</b> provides an enterprise-grade infrastructure to allow companies and financial actors to compliantly issue, transfer, and manage assets on blockchain.
<b>9</b>	<b>Verite</b> is a collection of standardized protocols for decentralized identity verification.
	<b>Spruce</b> is a toolkit for digital identity and can be used to reference investor and issuer compliance when transacting RWAs.



#### **Commodities:**

Projects that provide exposure to real-world commodities through tokenization or indexes.

0	Pax Gold is a gold-backed stablecoin issued by Paxos, representing one fine troy ounce of gold stored in LBMA-certified vaults, allowing fractional ownership and easy transfer on the blockchain.
<b>4</b>	<b>Tether Gold</b> is a similar asset-backed token issued by Tether, pegged to physical gold reserves and enabling secure, verifiable ownership with on-chain settlement.
<b>(4)</b>	<b>LandX</b> is a decentralized protocol tokenizing agriculture, providing capital to real-world farmers in exchange for a legal share of their crop in perpetuity.
<u>&amp;</u>	<b>Ostium</b> is a decentralized perpetual exchange on Arbitrum enabling onchain price exposure to a suite of Real World Assets, including with forex, commodities, indices, and blue-chip crypto assets.
<u></u>	<b>Aurus</b> is a trading platform for precious metals, enabling users to easily buy, trade, and earn tokenized gold, silver & platinum.
K	<b>Kinesis</b> is the issuer of Kinesis Gold (KAU) and Silver (KAG), and a platform to trade such tokenized commodities and earn yield through its vaults.



#### **Real Estate:**

Projects providing the fractionalization and/or tokenization of real estate for collective investment or trading.

	<b>Blocksquare</b> is a real estate tokenization infrastructure provider, with tools and modules for creation, issuance, sale, distribution, management, tracking and trade of tokenized properties.
	<b>CitaDAO</b> is a global marketplace for tokenized real estate built on the Ethereum ecosystem.
	Parcl is a decentralized perpetuals exchange for real estate synthetics, including global city indexes.
2	<b>Propy</b> is a platform that automates real estate transactions via smart contracts and NFTs.
<b>^</b>	<b>Lofty</b> is a fractional real estate marketplace on Algorand.
&	Tangible is a real-world asset tokenization protocol and marketplace.



### **Supply Chain:**

Tokenized physical items for enhanced authentication, transparent provenance tracking, and sustainable supply chain verification.

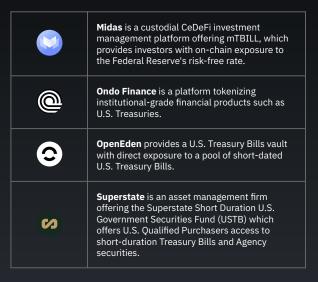
CO	<b>Covantis</b> is a blockchain-powered platform revolutionizing post-trade execution workflows in global agricultural commodities trading, enhancing efficiency, transparency, and information exchange among industry participants.
<b>(3</b> )	<b>Diamore</b> utilises blockchain technology to track and trace the origins of diamonds.
V	<b>VeChain</b> is a blockchain platform offering comprehensive solutions for enterprises to enhance business operations, particularly in supply chain management, by providing transparency and traceability of products, thereby promoting sustainability.
•	<b>Circularise</b> is a digital product traceability platform that leverages blockchain technology to enhance transparency and compliance across supply chains, aiding businesses in meeting sustainability and regulatory requirements.

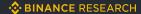


#### **Treasuries:**

Products offering tokenized real-world treasuries (including fixed income products and yield-bearing tokens).

BlackRock	BlackRock USD Institutional Digital Liquidity Fund (BUIDL) is the largest tokenized treasury fund on Ethereum.
<b>(</b>	<b>DigiFT</b> is a regulated exchange for on-chain real-world assets, such as equities, bonds, treasuries, and money market funds.
	Fortunafi provides an investment fund protocol that deploys investor funds into real-world assets ranging from publicly traded and private assets.
© FANKIN	Franklin Onchain U.S. Government Money Fund (FOBXX) includes fixed, floating and variable rate securities, as well as repurchase agreements collateralized fully by U.S. government securities or cash.
<b>(</b>	Hashnote is an institutional on-chain asset management firm offering USYC, the on-chain representation of Hashnote's Short Duration Yield Fund (SDYF).
<b>©</b>	Matrixdock is an real-world asset tokenization platform focusing on U.S. Treasury Bills.





#### **Credit:**

Projects connecting on-chain investors with real world private credit deals.

<b>©</b>	Centrifuge is a platform providing the infrastructure for tokenized real-world assets investment and on-chain credit.
<b>©</b>	Clearpool is a decentralized credit marketplace for unsecured institutional liquidity.
CREDIX	Credix is a decentralized credit marketplace on Solana connecting investors with FinTechs in emerging markets.
<b>§</b>	Goldfinch is a decentralized, globally accessible credit protocol connecting on–chain investors to real world borrowers.
<u></u>	<b>Maple</b> is an institutional capital network that provides the on-chain infrastructure connecting institutional lenders and borrowers.
<b>7</b> /2	Truefi is an on-chain credit protocol connecting borrowers, lenders, and portfolio managers.



### **Public Equities and Fixed Income:**

Projects that originate and create demand for public fixed income and equity-backed RWAs.

	<b>Backed Finance</b> is a protocol issuing tokenized structured products that track the value of publicly traded securities such as bonds and equities.
<b>₿enji</b>	<b>Benji Investments by Franklin Templeton</b> is a mobile app that allows investors to browse tokenized securities such as mutual and money market funds.
×	<b>BondbloX</b> is a fractionalized bond exchange that offers an assortment of public corporate bond offerings.
D	<b>Dinari</b> is a decentralized asset trading platform offering dShares, which are 1:1 backed Real World Asset tokens of stocks, ETFs, bonds, and other assets,
<u>~</u>	<b>Swarm Markets</b> is a regulatory-compliant platform offering a unique tokenization and trading solution to the world of TradFi.



#### **Climate:**

Projects that originate and create demand for climate asset-backed RWAs.

The Property of the Property o	Regen Marketplace creates a place to buy, trade, and retire ecological credits in the digital carbon market.
Frigg	<b>Frigg.eco</b> works with a select group of project developers and helps them access refinancing via crypto by issuing green bonds on-chain.
×	KlimaDAO is a DeFi protocol growing environmental commodity markets on-chain, as a means to efficiently and transparently accelerate climate financing at a global scale.
	<b>PYSE</b> is a green RWA tokenization platform on MANTRA, democratizing access to climate-focused solutions.
	<b>Toucan Protocol</b> is an infrastructure provider built to bring environmental assets like carbon credits on-chain, making them more accessible for markets and builders.



### **Marketplaces:**

Platforms that facilitate tokenization and trading of real-world assets and items.

~	Arkefi is a marketplace for trading and investment in fractional art, cars, and collectibles.
Ø	<b>Galileo</b> is luxury marketplace for tokenized and fractional assets such as watches, cars, wine, sneakers and more.
(8)	Polytrade is a decentralized trade finance platform focused on receivables financing.
Service Services	Watches.io is an on-chain luxury watch trading platform leveraging NFTs.



## VII. AI

# AI Vertical Spotlights

We identified 4 key areas of rapid innovation within the infrastructure sector.



#### **Decentralized AI**

The rise of decentralized AI networks offers greater autonomy and improved user privacy, yet the real challenge is ensuring these systems remain efficient, secure, and scalable without central authority oversight.



### **Backend Infrastructure**

Decentralized backend infrastructures offer AI systems scalable, cost-effective data storage, but the challenge remains in ensuring the reliability and performance needed for complex AI computations across distributed networks.



### **Agentic AI**

Agentic AI, driven by decentralized networks, facilitates autonomous decision-making, yet the key challenge lies in ensuring these agents stay accountable, transparent, and ethically aligned within a decentralized ecosystem.



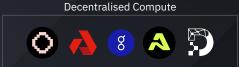
### **Decentralized AI Applications**

Decentralized AI applications are transforming creative industries and data-driven outputs by utilizing blockchain for transparency and traceability. However, widespread adoption will depend on addressing challenges related to data integrity, interoperability, and scalability.



# Vertical Overview

**Decentralised AI** 



Model Architecture

**Backend Infrastructure** 



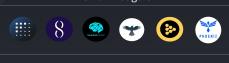
AI Agent Launchpads

**Agentic AI** 



**Smart Ledgers** 

**Decentralised AI Applications** 



Dev Platforms



Network Layer



Agentic Infrastructure



Data



Decentralised File Storage



Middleware



Creative Generations



## Subcategory Description

### **Decentralised Compute:**

Blockchain-powered distributed computing networks like Akash, Golem, and Aethir enable users to rent and share unused computational resources, creating a global, permissionless marketplace for processing power and GPU capabilities.

0	Gensyn AI is a protocol rewarding participants for sharing computational resources to collectively train machine learning models.
<b>₹</b>	<b>Akash</b> is a decentralized cloud marketplace for buying and selling unused computing resources peer-to-peer.
8	<b>Golem</b> is a global supercomputer network allowing users to rent out and utilize excess computing power for complex tasks.
A	<b>Aethir</b> is a decentralized cloud infrastructure optimized for scalable AI and GPU computing resources.
Ð	Destra is a blockchain-based platform for secure data sharing, AI model development, and distributed computational resource allocation.

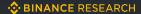


## Subcategory Description (cont.)

#### **Dev Platforms:**

AI Dev platforms like GM AI, OG Labs and Near are decentralized frameworks that combine blockchain technology with AI tools, enabling developers to create, deploy, and monetize AI-driven applications with secure data sharing and automated smart contracts.

GM.AI	GM AI is a generative AI platform developing creative and conversational AI technologies with a focus on enterprise and creative applications.
<b>0</b> G	<b>OG Labs</b> is a blockchain and Web3 technology research and development company exploring decentralized gaming, NFT, and digital asset infrastructure.
M	<b>Near</b> is a high-performance blockchain platform designed for scalable decentralized applications with a focus on developer-friendly infrastructure and fast transaction processing.
+	Galadriel is a blockchain network specialized in providing AI-powered computational infrastructure and decentralized machine learning capabilities.
T	<b>Bittensor</b> is a blockchain-based peer-to-peer network enabling AI models to collaboratively train and exchange knowledge through a decentralized marketplace.



## Subcategory Description (cont.)

### **Decentralised File Storage:**

Projects that provide users with access to storage services based on a decentralized infrastructure.

a	Arweave offers permanent and decentralized storage in an open ledger.
<b>©</b>	<b>BNB Greenfield</b> is a decentralized storage infrastructure that simplifies the process of storing and managing data access.
<b>f</b>	Filecoin is an decentralized, peer-to-peer cloud storage network for monetizing, storing, and retrieving data.
0	<b>Sia</b> is a decentralized cloud storage platform that enables trustless interactions between renters and hosts.
	<b>Storj</b> is a decentralized cloud storage solution prioritizing security and privacy.
•	Zus is a 3-layer security multi-cloud storage with no vendor lock-in and free egress.



## Subcategory Description (cont.)

### **Model Architecture:**

A decentralized model architecture distributes control and data across multiple nodes or systems, enhancing fault tolerance and scalability.

8	<b>Nimble</b> is an open AI platform that enables users to build, own, and monetize AI agents by providing tools for AI development, resource matching, and workflow optimization within a decentralized network.
<b>T</b>	<b>Bittensor</b> is a blockchain-based peer-to-peer network enabling AI models to collaboratively train and exchange knowledge through a decentralized marketplace.
*	<b>EnqAI</b> is a decentralized AI platform that integrates blockchain technology to enhance data privacy and security in AI applications.
ogensyn	<b>Gensyn</b> is a decentralized AI compute network that connects global compute resources for machine learning tasks.
$\infty$	<b>DFinity</b> is a blockchain-based platform that integrates AI capabilities to create secure, decentralized systems



# Subcategory Description (cont.)

### **Network Layer:**

he infrastructure that enables communication and coordination among distributed nodes, facilitating tasks such as data sharing, model training, and consensus mechanisms without relying on a central authority.

Allora	<b>Allora</b> is a self-improving decentralized AI network that democratizes access to advanced, context-aware intelligence.
<b>\$</b>	CommuneAI is a decentralized artificial intelligence platform that integrates blockchain technology to enhance data privacy
*	<b>Pond</b> is a decentralized platform that connects global compute resources for machine learning tasks

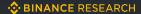


## Subcategory Description (cont.)

### **Middleware Layer Application:**

Projects that utilize the resources from infrastructure projects to provide products and services like AI agents, inference verification, authentication, etc.

	Fetch.ai is a platform that allows users to easily build, deploy and monetize AI-related services. DeltaV by Fetch.ai, is a AI-powered e-commerce platform.
8	SingularityNET is the leading decentralized marketplace for AI algorithms.
ocean	Ocean is an open-source protocol that allows individuals and businesses to exchange and monetize data and data-based services.
0	Worldcoin is a project and financial network that aims to preserve human identity privacy, featuring elements such as the World ID, Worldcoin Token, and World APP.
AI	Oraichain is an AI-powered blockchain and AI Oracle service provider.
%	<b>Modulus</b> uses Zero-Knowledge Machine Learning ("ZKML") technology to allow smart contracts leverage the power of AI while maintaining the security and transparency of blockchain technology.

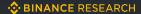


## Subcategory Description (cont.)

### **AI Agent Launchpads:**

AI agent launchpad protocols like Virtuals Protocol, Creator Bid, and Myshell enable autonomous, blockchain-coordinated AI entities that can perform complex tasks, interact with smart contracts, and collaborate through incentive-driven computational networks.

	<b>Vvaifu</b> is an AI agent-based token issuance platform built on Solana, enabling users to create and deploy AI-driven entities seamlessly.
9	Virtuals Protocol is a decentralized platform for creating, trading, and managing digital AI agents and virtual entities using blockchain technology.
**	Creator Bid is an AI-driven digital content monetization and ownership platform on the Base ecosystem, allowing users to create and issue AI agents with ease.
<b>(#)</b>	<b>Holoworld</b> is a platform that enables users to create AI-powered virtual characters and integrate them into various applications, focusing on tools to turn agents into entertainment brands.
<b>♦</b>	Myshell is a platform that allows users to build, share, and own AI applications, connecting users, creators, and open-source AI researchers.



## Subcategory Description (cont.)

### **Agentic Infrastructure:**

Emerging blockchain-based agentic infrastructures such as Netmind AI, Giza AI and Olas create decentralized ecosystems that allow AI models to train, exchange knowledge, and execute computational tasks across peer-to-peer networks with transparent, trustless coordination mechanisms.

<b>₩</b>	<b>Netmind AI</b> is a decentralized AI computing platform that enables distributed machine learning and collaborative model training across a peer-to-peer network.
<b>4</b>	<b>Giza AI</b> is a blockchain-powered platform for developing and deploying zero-knowledge AI models with a focus on privacy and computational efficiency.
	<b>Olas</b> is a decentralized AI coordination protocol that enables autonomous AI agents to collaborate and execute complex computational tasks through a blockchain-based infrastructure.
•	<b>Talus</b> is a distributed computing network designed to provide scalable, secure computational resources for AI and machine learning applications.

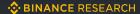


## **Subcategory Description (cont.)**

### **Smart Ledgers:**

Smart ledger for multi-purpose AI data storage and applications.

	<b>Fetch.ai's</b> blockchain and artificial intelligence features enable users to link to and access private datasets while performing tasks autonomously.
8	<b>SingularityNET</b> aims to make it simple for anyone to develop, distribute, and sell AI services using their blockchain technology.
Desphan Croin	<b>DeepBrain</b> Chain is a blockchain-specific ecosystem for training, developing, and deploying AI models for a wide range of services and products.
*	<b>Raven</b> is developing a distributed network of compute nodes for Artificial Intelligence and Machine Learning on BNB Chain.
<b>(2)</b>	<b>iExec RLC</b> uses the capabilities of blockchain and secure computing to create an AI-driven environment for Requesters, Providers, and Developers.
PHOENIX	<b>Phoenix</b> is a blockchain infrastructure platform for decentralized AI and privacy-computation scaling, consisting of a L1, Computation Platform (L2), and Data Oracle.



## Subcategory Description (cont.)

#### Data:

Data services on the blockchain driven by the use of AI

🤿 the graph	The Graph is one solution for AI developers planning to develop a model by requesting data from blockchains.
P	Phala Network provides access to privacy-preserving data for AI models.
<b>(</b>	Origin Trail is a decentralized knowledge graph - organizing AI-grade knowledge assets, making them discoverable and verifiable.
	IQ.Wiki is a blockchain encyclopedia and is powered by AI.
<b>(3)</b>	Measurable Data Token (MDT) is a data-driven ecosystem.
	Ocean Protocol, a new AI crypto project, declared its goal to open data to the public, thereby decreasing the monopolistic control of organizations in the data and AI sectors.
AI	OraiChain is an AI Layer 1 for Data Economy & Oracle Services



## Subcategory Description (cont.)

### **Generative Creations:**

Generative creations on the blockchain driven by the use of AI.

	Alethea AI is building web 3 infrastructure for generative AI such as CharacterGPT, Text-To-Character, and other dApps.
₹	<b>Verasity</b> is a blockchain company creating AI experiences in esports, AdTech, and digital rights management.
ML	<b>Modulus Labs</b> is brining AI on-chain using ZK Proofs, and creating experiences like on-chain games and imagery.
[1]	<b>AlgalonAI</b> is a blockchain platform that specializes in providing a range of generative artificial intelligence tools and solutions for the blockchain industry.
Botto	<b>Botto</b> is a a decentralized, autonomous artist governed by the users.
PIXIA	<b>Pixia</b> is an AI that allows users to generate art on twitter, create NFT collections and staking contracts!



### VIII. DeSci

# **DeSci** Vertical Spotlights

### We identified 4 key areas of innovation within DeSci



#### **Infrastructure**

Infrastructure such as DAO formation, IP tokenization, funding marketplaces provide the building blocks for the DeSci movement.



#### Research

The emergence of decentralized autonomous organizations enable the formalization of shared interests amongst various sets of stakeholders.



#### **Data Services**

Data services provide the tools for high data integrity and ease of accessibility to foster scientific collaboration



#### Memes

Memecoins are highly speculative assets that derive most of their value from cultural references known as memes.



### **DeSci** Vertical Overview





Communities

Research



Publishing / Peer Review

**Data Services** 



### **Memes**



#### **DAO Tooling**



#### DAOs



#### Management

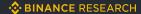




### **Funding Platforms**

Platforms to connect potential funders and fundees.

8	Catalyst by Molecule is a IP-NFT / tokens marketplace
3~3	BIO Launchpad is an investment platform for DeSci DAOs
•	Pump.science is a crowdfunding platform for longevity compounds testing
	Merito Network connects scientists with funders to execute sponsored research agreements
Frontier	FrontierDAO is an OpenScience accelerator



### **DAO Tooling**

Infrastructure tooling for DAO formation, funding and IP tokenization

8	Molecule is a IP tokenization and fractionalization platform
<b>a</b>	DeTechWorld is a IP tokenization and fractionalization platform
	Scinet is a IP management platform that allows research institutions to showcase and license their technology
	Gridcoin is a platform that enables distributed computing for science research

### **DeSci Communities**

Communities focused on DeSci advancement

SW DEEG.	<b>DeSci London</b> is the longest running and largest DeSci community that has been running monthly meet ups since 2022
DESCIO GLOBAL	<b>DeSci Global</b> is a schelling point for connecting DeSci builders and enthusiasts to communities and events around the world
	DeSci Collective is a community of DeSci brains and builders
	DeSci LATAM is a open science movement focused on Latin America
	Dreambrooks Labs is focused on building sustainable infrastructure and economic system for decentralized science
	DeSci World is a DeSci hub and is working on a proof of knowledge layer where DeSci and AI connect



#### **DeSci DAOs**

Capital formation vehicles to fund and research a specific or various scientific field.

Vinabio	VitaDAO is a DAO focused on early stage longevity research
<b>8</b>	ValleyDAO is a DAO focused on synthetic biology research to protect the future of Earth
0	CryoDAO is a DAO focused on cryopreservation research
<b>(b)</b>	AthenaDAO is a DAO focused on women's health research
	PsyDAO is a DAO focused on psychedelics research
<b>4</b> +	HairDAO is a DAO focused on hair loss research

### DeSci DAOs (cont.)

Capital formation vehicles to fund and research a specific or various scientific field.

***	LabDAO is a DAO focused on open source drug discovery
<b>®</b>	CerebrumDAO is a DAO focused on alzheimer research
8	Long COVID DAO is a DAO focused on covid chronic health condition research
CURE	CureDAO is a DAO focused on clinical discovery to minimise suffering
6	GenomesDAO is a DAO focused on the private and equitable monetisation of genomic data
	Quantum Biology DAO is a DAO focused on quantum biology research

### **Publishing / Peer Review**

Platforms that enable sharing of scientific research in an open and accessible way

Ż	ResearchHub is a preprint and peer review platform
$\infty$	DeSci Foundation is a curated research platform
	DeSCIER is a decentralized science journal platform
<u></u>	Peeryview is a decentalized publishing platform
Ŷ	DeSci Labs is a preprint network with validated badges
	Ants Review is an incentivised peer review platform
	Yesnoerror is an AI agent that uncovers errors in scientific papers



### **Data Management**

Data management platforms to store, share and work on data collaboratively

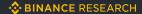
	AminoChain is an L2 that acts as a credibly neutral data sharing platform
₩	Bacalhau is a distributed compute over data platform
	Ocean Protocol enable computation on private data with specific access controls
A	WeaveChain is a platform that enables verifiable data licensing
<del>f</del>	Filecoin is a decentralized data storage marketplace and protocol
<b>G</b>	OriginTrail is a Decentralised Knowledge Graph the integrates scientific findings and ensures data ownership and verifiability
<b>♦</b>	Ceramic is a ecosystem of apps and services running on verifiable, scalable data infrastructure



### **Memecoins**

Speculative assets tied to DeSci research or funding

-350-	Urolithin A is a pump.science token launched to fund the compound's testing for longevity
***	Rifampicin is a pump.science token launched to fund the compound's testing for longevity
	BigPharamai is a community led effort to back the most impactful projects in DeSci
	Anti / Pro Token creates an environment where users can fund as well as bet on the outcome of a scientific experiment



### **About Binance Research**

Binance Research is the research arm of Binance, the world's leading cryptocurrency exchange. The team is committed to delivering objective, independent, and comprehensive analysis and aims to be the thought leader in the crypto space. Our analysts publish insightful thought pieces regularly on topics related but not limited to, the crypto ecosystem, blockchain technologies, and the latest market themes.



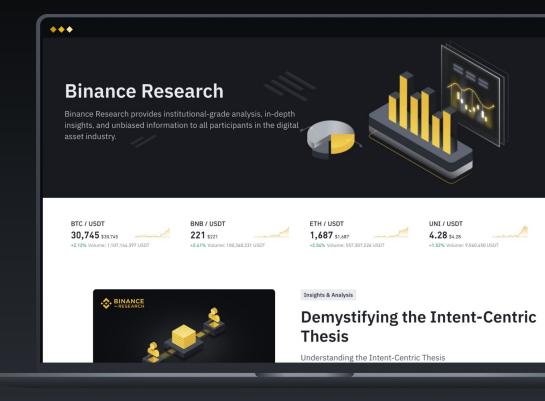
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### **Contributors**



### **Jamyson Gouveros**

#### **Macro Research Intern**

Jamyson is currently working for Binance as a Macro Research Analyst intern. Prior to joining Binance, he worked as a Venture Capital Analyst, and later, a pre-seed investor. He is a sophomore at the University of New South Wales ("UNSW") and has been involved in the cryptocurrency space since 2021 after founding a tokenisation start-up.