

Interweave Network: A Decentralized Graph Representing an Explorable, User-Built Heterogeneous Metaverse

Abstract

Human existence revolves around our twin needs to *explore*, experiencing our environment, and to *build*, modifying it. Computer-based manifestations of our urge to explore, including the World Wide Web and computer games, have commensurately proved to be enormously significant in modern culture and society. But users do not have perfect freedom to wander the digital frontier -- games in particular are highly siloed from one another, with one virtual world rarely reachable from within any other. Our desire to build has proven considerably more difficult to fulfill, an asymmetry suffered partly because of a lack of know-how, but also significantly at the hands of centralization. Gatekeepers like domain registrars and monolithic game studios have made obtaining a website, or adding something to a favorite game world, difficult or impossible for the average Internet user, who is left with the meager Facebook post or YouTube vlog as their primary creative outlet.

The Interweave Network project intends to eliminate the explore/build asymmetry in the [metaverse](#) and make meeting these equally important needs equally frictionless and seamless.

A new type of digital tool, the [programmable blockchain](#), has recently emerged to provide mechanisms for decentralizing and finalizing arbitrary state transitions. Interweave Network proposes to use such a framework to disentangle the simple acts of visiting shared virtual locations and creating new ones from the inequitable and insecure concentrations of power that currently comprise the status quo.

The Interweave Network will consist of a decentralized graph on the [Ethereum](#) blockchain, whose nodes represent literally anything conceptually identifiable as a *place*, and frontend viewer applications that connect to the smart contracts containing this graph, interpret node and edge data for users, and provide an interface for creating new content. The Network will allow its users to create, own, transfer, and connect nodes in an easy, fair, and secure manner. Nodes will each be an instance of an [ERC721](#) non-fungible token with additional properties like a data URL and list of edges connecting to other nodes that can be managed only by the owners of the nodes involved. Critically, nodes will be an *unlimited* resource: users can create as many as they can afford the gas for. Value will come not from scarcity, but from quality and connectedness.

The end goal of the project is to interweave every virtual place possible, existing and new, into one seamless, metaverse-spanning network.

Table of Contents

1. [Existing Work](#)
2. [Rationale](#)
3. [Philosophy](#)
4. [Architecture](#)
5. [Applications](#)
6. [Challenges](#)
7. [Summary](#)
8. [Further Reading](#)

Existing Work

Rationale

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