

# libp2p

## Modular Peer-to-Peer Networking Stack for Rust

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# Introduction

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- Building a peer-to-peer network (in Rust) at **Dria**<sup>1</sup>.
- Interested in EVM & Solidity, and all kinds of languages!
- Loves open-source, contributed to a few zero-knowledge cryptography & LLM libraries.
- Worked on GPU programming (CUDA) at Koç University.
- Using Rust for ~2 years, can't go back to **anything else**.
- See more at **erhant.me**<sup>2</sup> or `github.com/erhant`.
- This presentation is written in **Typst**, a typesetting language built in Rust!

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<sup>1</sup>formerly known as **FirstBatch**

<sup>2</sup>note to self: rewrite with `ratzilla`

# What is libp2p?

libp2p<sup>1</sup> is a modular peer-to-peer networking stack, driven by well-designed specifications with several implementations (Go, JavaScript, **Rust**, C).

Rust implementation of libp2p in particular is being used in notable projects like **IPFS** client, **Lighthouse** Ethereum consensus client, **Filecoin** client, **Substrate** (of Polkadot), and many more.

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<sup>1</sup><https://github.com/libp2p/rust-libp2p>

### Connection

- TCP, QUIC, WebSocket
- Multiplexing (**Yamux**, **mplex**)
- Security (**Noise**)

### Discovery

- Kademlia DHT
- Multicast DNS (mDNS)
- Rendezvous

### Communication

- GossipSub
- Request-Response
- DCutR

**Thank You!**

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