



## **0.1 Research on Blockchain Consensus Protocols (Master's Thesis)**

- Developed blockchain consensus protocols for Tezos, Proof of Work and Authority. Created tools, such as Bootstrapper and Live Testing Tool, using OCaml to enhance protocol creation, performance evaluation.

## **0.2 Arrow Distributed Directory Protocol**

- Implemented a distributed directory protocol node in Go, featuring a live visualization tool for network state and access control in distributed systems.

## **0.3 Distributed Database/Filesystem**

- Created a distributed database and filesystem using Rust and Libp2p, focusing on efficient data storage and retrieval in a peer-to-peer network.

## **0.4 On-disk Key Value Database**

- Engineered a key-value disk database in C, utilizing B-trees for optimized data management and access.

## **0.5 Language Design/Compilers**

- Developed Garbage Lisp, a Go-based interpreter and an OCaml-based Pascal to Assembly (X\_86) compiler, demonstrating expertise in language design, parsing, and code generation.

## **0.6 Ethereum/EVM/Solidity**

- Developed in Solidity a DEX with liquidity pool mechanics for token swaps and a game leveraging smart contracts for interactive gameplay, both deployed on the EVM.

## **0.7 Solana**

- Built a fully decentralized social network leveraging TypeScript and IPFS, and implemented a token holding platform with incentives, both utilizing Solana's blockchain capabilities.