




Vabuk Pahari

 vpahari@mpi-sws.org |  www.vpahari.github.io |  vpahari

Summary

I am a final year PhD student at the Max Planck Institute for Software Systems (MPI-SWS). I work on public blockchains (Ethereum and Layer-2s), Decentralized Finance (DeFi) and Decentralized Autonomous Organizations (DAOs), with a focus on how economic incentives and mechanism design shape the behavior of participants in blockchain ecosystems.

I have extensive experience in the full lifecycle of on-chain data, from deploying and maintaining archive nodes (Ethereum, Base, Optimism) to architecting large-scale databases for efficient processing and visualization. By translating raw blockchain data into actionable insights, I have mapped the complex interactions of blockchain ecosystem participants (such as builders, proposers, and MEV bots). Moving forward, I am eager to apply this expertise within Decentralized Finance (DeFi), specifically to leverage my technical and analytical background to build scalable, real-world products that transform traditional financial systems.

Education

Max Planck Institute for Software Systems, Saarbrücken Germany September 2020 –
PhD. Candidate in Computer Science. Advised by Dr. Krishna Gummadi.

- Deployed and maintained an Ethereum, Base, and Optimism Archive Nodes to enable large-scale blockchain data collection, processing, and visualization
- Led research on blockchains on DeFi and MEV, which were published in scientific conferences
- Analyzed the Ethereum DAO ecosystem, and audited their Governance Contracts for potential attacks and vulnerabilities

Wesleyan University, Middletown, CT, USA May 2020
Master of Arts, Computer Science.

Led research on the robustness of large theoretical and real-world networks.

Wesleyan University, Middletown, CT, USA May 2019
Bachelor of Arts, Double Major: Mathematics and Computer Science: GPA: 4.00/4.00. Graduated *Phi Beta Kappa*.

Work Experience

Chainlink Labs, Research Engineering Intern July 2022 – December 2022

- Worked on Cross-Chain Interoperability Protocol (CCIP) for securely sending tokens and data between blockchains
- Implemented Smart Contracts in Solidity for Cross-Chain Governance using CCIP
- Researched the dynamics of using different kinds of ERC20 Token Structures for Cross-Chain Bridges

Infineon Technologies, *Intern*, Munich, Germany June 2017—August 2017

- Wrote a library in C++ for the Optiga Trust E, a security chip, and the TLE5012, a magnetic sensor, to communicate with microcontrollers. Results: Optiga Trust E and TLE5012 have both been released
- Built a cryptographic library for public key authentication using WolfSSL and Optiga Trust E—stored X.509 certificates.

Publications and Pre-prints

Becoming Immutable: How Ethereum is Made

Vabuk Pahari and Andrea Canidio.

Pre-print: <https://arxiv.org/pdf/2506.04940>

Non-archival: CBER Crafting the Cryptoeconomy Conference, Columbia University, New York, USA, October 2025

How Exclusive are Ethereum Transactions? Evidence from non-winning blocks

Vabuk Pahari and Andrea Canidio.

To Appear in 5th International Workshop on Cryptoasset Analytics (CAAW 2026)

Pre-print: <https://arxiv.org/pdf/2509.16052>

Non-archival: Futures of Money II, Paris, May 2025

On the Governance of Decentralized Autonomous Organizations

Vabuk Pahari, Balakrishnan Chandrasekaran, Abhisek Dash, Krishna P. Gummadi, and Johnnatan Messias.

Non-archival: The Latest in DeFi Research (TLDR), May 2025

Non-archival: The Ethereum Community Conference (ETHCC), July 2025

Non-Atomic Arbitrage in Decentralized Finance

Vabuk Pahari, Lioba Heimbach, and Eric Schertenleib

In Proceedings of IEEE Symposium on Security and Privacy (S&P), San Francisco, CA, USA, May 2024

Non-archival: 4th Workshop on Decentralized Finance (DeFi), May 2025

Dissecting Bitcoin and Ethereum Transactions: On the Lack of Transaction Contention and Prioritization Transparency in Blockchains

Johnnatan Messias, **Vabuk Pahari**, Balakrishnan Chandrasekaran, Krishna P. Gummadi, and Patrick Loiseau.

In Proceedings of the Financial Cryptography and Data Security (FC 2023). Bol, Brač, Croatia.

Understanding Blockchain Governance: Analyzing Decentralized Voting to Amend DeFi Smart Contracts

Johnnatan Messias, **Vabuk Pahari**, Balakrishnan Chandrasekaran, Krishna P. Gummadi, and Patrick Loiseau.

Pre-print: <https://arxiv.org/pdf/2305.17655>

Skills

- **Technical** – Python, Solidity, Javascript, SQL, MongoDB, Statistics, Data Analysis and Visualization, Node Deployment
- **Soft Skills** – Cross-Functional Collaboration, Mentorship, Project Leadership, Scientific Communication
- **Languages** – English (Fluent), German (Fluent), Nepali (Native)