SARAYU NAMINENI

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EDUCATION

M.S. in Computer Science-Research Thesis January — December 2023
Carnegie Mellon University, Pittsburgh, PA GPA: 3.99/4.0
Thesis title: *Preserving privacy and proving reputation in decentralized token systems.*
B.S. in Computer Science August 2019 — December 2022
Carnegie Mellon University, Pittsburgh, PA GPA: 3.65/4.0

RESEARCH PUBLICATIONS

Master's Thesis
S. Namineni, *Preserving privacy and proving reputation in decentralized token systems*, December 2023.
Presentations
1. *Privacy-preserving reputation-based lending smart contract.* Security for Software and Hardware Systems Final, Carnegie Mellon University, Pittsburgh, PA, May 2023. (Poster)
2. *Assessing blockchain protocols in reputation-based networks.* Meeting of the Minds Undergraduate Research Symposium, Carnegie Mellon University, Pittsburgh, PA, May 2022. (Poster)

RESEARCH EXPERIENCES

Efficient ZKPs for Blockchain Reputation Carnegie Mellon University, Pittsburgh, PA
Supervised by Prof. Elaine Shi, working with Ph.D. student Abhiram Kothapalli September 2023 - Present

- Developed novel cryptographic primitive to prove statements of user reputation in zero knowledge on the blockchain
- Leveraged incrementally verifiable computation to efficiently update user's reputation as new blocks are added
- Applied construction for monotonic reputation functions to prior research work on decentralized token systems

Privacy-Preserving Ledger Design and Implementation Carnegie Mellon University, Pittsburgh, PA
Advised by Prof. Seth Goldstein January 2023 - Present

- Developed a privacy-preserving UTXO-based protocol for this system as an extension of ZCash
- Designed and implemented Ethereum smart contract with a single-step destination- and value-anonymous transfer
- Analyzed multi-step origin-anonymous transfer with better incentivizes under the "pay for privacy" model

Optimizing Ledger Operations Carnegie Mellon University, Pittsburgh, PA
Advised by Prof. Seth Goldstein August 2021 - December 2022

- Implemented ledger which supports transfers over user-defined tokens as a smart contract on a layer-1 blockchain
- Optimized query times by three-fold and storage costs by eight-fold by reducing the size of account identifiers
- Developed client-side SDK to compare performance of this system implemented on different blockchain protocols

TEACHING EXPERIENCE

Parallel Computer Architecture and Programming (15-418) Carnegie Mellon University, Pittsburgh, PA
Teaching Assistant January - May 2023

- Wrote questions for bi-weekly written HW covering ISPC, CUDA, memory consistency, locks, and transactions
- Developed Python scripts to automate score reporting for labs run on class-specific computing clusters

Introduction to Computer Systems (15-213) Carnegie Mellon University, Pittsburgh, PA
Teaching Assistant January - August 2021

- Wrote final exam questions covering assembly, stack, caches, memory allocation, signals, I/O, VM, and web servers
- Taught hour-long weekly discussion sections for 15 students and met individually with students for code reviews

WORK EXPERIENCE

Amazon Sunnyvale, CA
Software Development Engineer Intern May - Aug 2022

- Designed, implemented, and tested the Alexa Polyglot feature in Java for Fire OS 7+ tablets
- Decoupled Alexa on Tablet's locale from the device locale by restructuring middleware event flow
- Supported language switching for Alexa on Tablet across all 16 available locales

The College Community Remote
Cofounder & CTO July 2020 - 2021

- Built an app to connect university students to campus life during remote learning in React Native, Node, and SQL
- Launched the app at Carnegie Mellon University in September 2020 with over 400 downloads
- Runner-up at the 2021 CMU McGinnis Venture Competition and awardee of LookUp Startup Innovation Grant