SARAYU NAMINENI

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EDUCATION

M.S. in Computer Science-Research Thesis   January — December 2023
Carnegie Mellon University, Pittsburgh, PA   GPA: 4.0/4.0
Thesis title: *Preserving privacy and proving reputation in decentralized lending applications.*
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 lending applications*, December 2023.
Presentations
1. *Privacy-preserving reputation-based lending smart contract.* Security for Software and Hardware Systems (15-799) 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

- Developing cryptographic primitive that can efficiently update a zero-knowledge proof for blockchain reputation
- Generalizing construction with respect to an application-specific reputation function
- Analyzing use case for decentralized applications, such as the reputation of debtors in peer-to-peer lending pools

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

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

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

- Implemented ledger prototype, which can mint or transfer instances of user-defined tokens that accrue reputation
- Optimized query performance by implementing prototype as a layer-1 smart contract and restructuring data
- 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