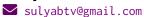
Sulyab Thottungal Valapu



in sulyab

sulyabtv

sulyabtv.github.io

Research Interests

My research aims to strengthen the resilience and fairness of the internet's core infrastructure by advancing networking technologies that support decentralization and counteract consolidation. I am particularly interested in studying the cloud-centric internet to understand its dynamics and develop strategies that promote a more open and decentralized ecosystem. To achieve these goals, I draw on methods from disciplines such as internet measurement, distributed systems, and applied cryptography.

Experience

2021 -

- ♦ University of Southern California | Graduate Teaching Assistant
 - Teaching Assistant for Fundamentals of Computation (Spring '21, Fall '24), Intro to Algorithms and Theory of Computing (Fall '21), Intro to Computer Systems (Spring '25), Intro to Computer and Network Security (Spring '22), and Database Systems (Summer '24)

2018 - 2020

- ♦ Arista Networks | Software Engineer
 - Developed Network Layer software for Arista EOS®
 - Involved in all stages of software development process including design, development, deployment, debugging and maintenance

Education

2021 -

- ♦ **Ph.D., University of Southern California** Computer Science.
 - Advised by Prof. Bhaskar Krishnamachari
 - Member of Autonomous Networks Research Group
 - GPA: 3.96/4.0

2014 – 2018

- ♦ **B.Tech., IIIT Allahabad** Information Technology.
 - GPA: 9.37/10. Graduated with Honors.

Publications

Conference Proceedings

- Sulyab Thottungal Valapu, Aritri Saha, Bhaskar Krishnamachari, Vivek Menon, and Ujjwal Guin. "Reward-based Blockchain Infrastructure for 3D IC Supply Chain Provenance". In: 2025 IEEE International Symposium on Hardware Oriented Security and Trust (HOST). To appear.
- **Sulyab Thottungal Valapu**, Tamoghna Sarkar, Jared Coleman, Anusha Avyukt, Hugo Embrechts, Dimitri Torfs, Michele Minelli, and Bhaskar Krishnamachari. "DARSAN: A Decentralized Review System Suitable for NFT Marketplaces". In: *Blockchain ICBC 2023*. Ed. by Qin Wang, Jun Feng, and Liang-Jie Zhang. Cham: Springer Nature Switzerland, 2023, pp. 3–20. ISBN: 978-3-031-44920-8. **9** DOI: 10.1007/978-3-031-44920-8_1.

Technical Reports

Sulyab Thottungal Valapu and Bhaskar Krishnamachari. *A Survey of Probabilistic Micropayment Schemes*. Tech. rep. IEEE Blockchain Technical Briefs, Mar. 2022.

Skills

Languages

♦ Proficient: Python • C • C++

Familiar: Rust • WebAssembly • Java

Tools / Technologies

♦ Linux System Programming • Virtualization (Containers, VMs) • Linux Kernel Networking Stack • OpenWRT

Miscellaneous Experience

Internships

2017/05 - 2017/07

- ♦ Yonsei University, South Korea
 - Designed and implemented a blockchain-based protocol for intelligent autonomous vehicles to exchange messages and purchase services.
 - Explored the concept of blockchain branching to tackle scaling limitations

Awards and Achievements

Activities

2017

♦ Core Team member of Hack In The North, the largest student-led hackathon in India

2022, 2023

 Research Coach for the Viterbi Summer Institute, a program by the USC Viterbi School of Engineering designed to offer incoming freshmen from underrepresented backgrounds an introductory research experience.

Selected Coursework

Systems

Advanced Computer Networking

Networked Systems in Cloud Computing

Internet Measurement

Autonomous Cyber-Physical Systems

Applied Cryptography Network Security Operating Systems

Algorithms

Advanced Analysis of Algorithms

Natural Language Processing

Artificial Intelligence