Sulyab Thottungal Valapu

sulyabtv@gmail.com sulyab sulyabtv sulyabtv.github.io

Research Interests

My research centers on Internet measurement and protocol design to support decentralization and counteract consolidation on the Internet. Recently, I have been studying IPv6 adoption and the privacy risks and opportunities created by the shift to IPv6. Previously, I focused on decentralized reputation mechanisms for blockchain applications.

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, Summer '25).

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. John Heidemann
• Member of Analysis of Network Traffic (ANT) Lab
• GPA: 3.96/4.0

2014 – 2018 ◇ **B.Tech., IIIT Allahabad** Information Technology.
• GPA: 9.37/10. Graduated with Honors.

Publications

Conference Proceedings

1. Dipsy Desai, Kicho Yu, and **Sulyab Thottungal Valapu**. "Geofeed Adoption and Authentication". In: *NOMS 2025-2025 IEEE Network Operations and Management Symposium*. ISSN: 2374-9709. May 2025, pp. 01–08. DOI: 10.1109/NOMS57970.2025.11073659.

2. **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)*. ISSN: 2765-8406. May 2025, pp. 370–380. DOI: 10.1109/HOST64725.2025.11050057.

3. **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. DOI: 10.1007/978-3-031-44920-8_1.

Preprints

1. Alex Sotiropoulos, **Sulyab Thottungal Valapu**, Linus Lei, Jared Coleman, and Bhaskar Krishnamachari. *Crowd-SFT: Crowdsourcing for LLM Alignment*. June 2025. DOI: 10.48550/arXiv.2506.04063. arXiv: 2506.04063[cs].
2. **Sulyab Thottungal Valapu** and John Heidemann. *Towards a Non-Binary View of IPv6 Adoption*. July 2025. DOI: 10.48550/arXiv.2507.11678. arXiv: 2507.11678[cs].

Technical Reports

1. **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 (incl. `netfilter`) • 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

2017 ◇ Dean's Merit List, IIIT Allahabad

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
AI	◇ Cognitive Science Natural Language Processing Artificial Intelligence