Sulyab Thottungal Valapu

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Education

PhD | Computer Science
University of Southern California | 2021 - Present
- CGPA: 3.94/4.0
- Member of Autonomous Networks Research Group, led by Prof. Bhaskar Krishnamachari

BTech | Information Technology
IIIT Allahabad | 2014-2018
- CGPA: 9.37/10
- Graduated with Honors

Research Areas

- **Computer Networking**
- **Blockchain**
- **Internet of Things**

Skills

Languages
Proficient: Python • C • C++
Experienced: Java • MATLAB

Technologies
Blockchain

Frameworks & SDKs
Android Studio • OpenGL • SciPy

Tools
GDB • Linux shell scripting • Wireshark • libpcap

Coursework

Networks & Systems
Advanced Computer Networking
Autonomous Cyber-Physical Systems
Applied Cryptography
Network Security
Operating Systems

Algorithms & Software Engg
Advanced Analysis of Algorithms
Object Oriented Methodologies
Software Engineering

Cognitive Science & AI
Cognitive Science
Natural Language Processing
Artificial Intelligence

Experience

University of Southern California | Graduate Teaching Assistant
Jan 2021 - Present
- Classes taught: Fundamentals of Computation (Spring '21), Introduction to Algorithms and Theory of Computing (Fall '21) and Introduction to Computer and Network Security (Spring '22)
- Responsibilities include leading weekly discussion and lab sessions, designing problems and holding office hours

Arista Networks | Software Engineer
Jan 2018 - Dec 2020
- Developed Layer3 routing software, primarily enhancements to OSPF and OSPFv3 protocol implementations
- Involved in all stages of software development process including design, development, deployment, debugging and maintenance

Yonsei University, Incheon | Research Intern
Summer 2017
- Designed and implemented a Blockchain-based protocol for intelligent autonomous vehicles to exchange messages and purchase services.
- Analyzed the concept of blockchain branching to tackle scaling limitations
- Results were published in Madhusudan Singh and Shiho Kim, "Branch based blockchain technology in intelligent vehicle," *Computer Networks*, 2018.

Publications

- Sulyab Thottungal Valapu and Bhaskar Krishnamachari, "A Survey of Probabilistic Micropayment Schemes," *IEEE Blockchain Technical Briefs*, 2022

Selected Projects

A Decentralized Review System for NFT Marketplaces
- Designed and implemented a blockchain-based decentralized review system suitable for Non-Fungible Token (NFT) marketplaces *(under publication)*

Enhancing Statistical Machine Translation using reordering rules obtained through Data Mining techniques
- Enhanced existing English-Hindi SMT using reordering rules mined from parallel corpus

Character Recognition using Stroke identification from printed text
- Implemented stroke recognition using Expectation Maximization algorithm, and the resulting feature vector was used to build an OCR system

Activities

- Worked as Research Coach for the 2022 VSI program, an initiative by USC Viterbi School of Engineering to provide incoming first year students with an introductory research experience.

Awards

- Member of Dean's Merit List, IIIT Allahabad during undergraduate study
- Kerala State Champion in Maths Talent Search Exam, 2012