Sulyab Thottungal Valapu

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Education

PhD | Computer Science
University of Southern California |
Jan 2021 - Present
- CGPA: 4.0/4.0
- 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

- **Micropayments**
- **IoT Protocol Design**
- **Blockchain**

Skills

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

Technologies
Blockchain

Frameworks & SDKs
Android Studio • OpenGL • SciPy

Tools
GDB • Linux shell scripting • Wireshark • tcpdump

Coursework

Networks & Systems
Computer Networks
Autonomous Cyber-Physical Systems
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
Data Mining

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)
- 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 protocols
- Part of the team that implemented OSPF Segment Routing
- 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 trust model for intelligent autonomous vehicles
- The model could be used for inter-vehicular consensus, purchasing and providing of services etc.
- Analyzed the concept of blockchain branching to tackle scaling limitations
- Results were published in Singh & Kim, 2018: "Branch based blockchain technology in intelligent vehicle" *Computer Networks* %

Other Projects

Study on the differences in activation of dorsal and ventral pathways during story comprehension and solving mathematical expressions
- Computationally analysed whether the ventral semantic stream manifested in language processing is present while performing mathematical tasks as well

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

- Organized IEEE Technikwiz, an Indian national-level tech quiz and served in the core team that organized IEEE Computer Society India Symposium 2017
- Core Team member of Hack In The North 2.0, the biggest student-organized hackathon in India

Awards

- Member of Dean's Merit List, IIIT Allahabad during undergraduate study
- Kerala State Champion in Maths Talent Search Exam, 2012
- Kerala State Champion in IT Quiz, 2013