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## Samyukta Satish Rao

Looking for full-time opportunities starting May 2017

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EDUCATION

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### University of Southern California

Viterbi School of Engineering, Graduate program in Computer Science | 3.65 GPA

Los Angeles, CA

May 2017

### People's Education Society Institute of Technology

Undergraduate program in Computer Science | 9.27 GPA

Bangalore, India

May 2015

## WORK EXPERIENCE

### Internship at Door of Clubs, Inc.

Summer 2016

- Worked on a Java based resume parser involving technologies like GATE and ANNIE to extract relevant data to enhance resume upload process. Built a REST based framework to connect the java application to Amazon S3 and a web hook to ping the platform when processing is completed. Provided start/stop/restart functionalities with init.d scripts on the UNIX platform to further assist in making the process easier.

### Internship in the IT-Apps Department at Juniper Networks, Pvt Ltd, India

Jan-May, 2015

- I was involved in the development employee-centric application to manage trouble tickets within the company which gave me hands-on experience with amazon AWS and NodeJS.
- I helped the team with research on opensource monitoring tools and helped them identify the tools that were appropriate in the line of work.
- I was a team player and was a part of the POC for launching putty from browser for windows, Linux and Mac environments.

### Summer Internship at the Centre for Cloud Computing and Big Data, Dept. of Computer Science Engineering, PESIT

June-August, 2013

- Research project on Auto-scaling of Hadoop on OpenStack environment. It deals with the concerns of scaling and scheduling – two core concerns of deploying hadoop on cloud, due to the magnitude of data it handles.
- It deals with the storage modules that use the motto 'move the compute to the data rather than the data to the compute.'
- It provides an efficient way for industries to use open source cloud platforms like open stack and save costs as the other cloud platforms have the pay per use models.

## SKILLS AND LANGUAGES

**Operating Systems:** Windows/Linux; **Programming languages:** C/Python/Java/HTML/CSS/JavaScript/PHP/MySQL

**Other:** Hadoop/Openstack /Apache/Wireshark/Cisco Packet Tracer

## RESEARCH INTERESTS

Applied Cryptography (CSCI531) Computer Networks (EE450) Operating Systems Cloud Computing and Big Data

Current courses at USC: Internetworking and Distributed Systems (CSCI558L) Database Systems (CSCI585)

## PROJECTS (git handle: samyuktr)

### Custom protocol for reliable file transfer using UDP over lossy link

Fall 2016

- UDP was enhanced to enforce reliability (checked using md5sum) and increased throughput and large files of size 1G were transferred over 100Mbps 200ms RTT 20%loss link with a throughput of 34Mbps without any loss. The protocol was tested by varying traffic parameters as well.

### Fast and Reliable file transfer over TCP/IP – kernel hacking

- Modified TCP module of networking stack of Linux kernel (3.2.0) to optimize file transfer. Removed exponential back-off and slow start phase. Achieved a throughput of 4Mbps on a 100Mbps link with 20% loss and 400ms RTT.

### Custom Router.

Fall 2016

- Built a Software IP router in user space using raw sockets. Captured packets, determined next hop and sent the packet to the next hop. Implemented ping and traceroute functionalities. Calculated throughput (420Mbps) using iperf.

### Socket Programming

Spring 2016

- Implementation of TCP stream socket with the following functionalities – a) File type request - The client gives the file type of the file provided by the client. b) Checksum - MD5 checksum of the file provided by the client is computed. c) Download - Given file is downloaded from the server. Large file sizes were also handled.

### Event—driven simulator to simulate an Ethernet link.

Spring 2016

- Ethernet link simulator that handles packets arriving in deterministic, exponential and trace driven modes.

### Visual Cryptography, Cryptanalysis and Simulation of the Openssl base64 commands

Spring 2016

- Visual cryptography using Doug Stinson's cryptography technique to encrypt merge and decrypt binary files using MD5 checksum for key generation. Cryptanalysis using the classic classical polyalphabetic substitution cipher. Kasiski's method, average index of coincidence and auto correlation methods have been used.

### DES and AES Encryption Schemes

Spring 2016

- Implementation of DES and AES encryption schemes coded in C.

### Weather Application

Fall 2015

- Two projects – a Web based responsive application and an Android application. Both of these include the following - REST API calls to forecast.io API, AJAX functionality, hosted on AWS server, includes a map view of the location that is searched for, option to post on Facebook and a variety of other features.

### First step towards developing a smartJacket

Jan-May 2015

- SmartJacket, a prototype to detect stress levels in a working individuals, is a wearable device, a jacket with sensors in the glove area that monitors the stress levels of an individual based on his physiological features and provides possible solutions.
- Awarded best project at the annual inter college science fest – Prakalpa, 2016, PESIT, Bangalore.

### 'StuMart' - an initiative to enhance the experience of buying and selling of student material within the campus

Jan-May 2014

- This project was done to get a practical experience of the Software engineering techniques. I headed group of 14 students and Agile Development techniques. A web-based portal provides a platform for easy access to resources or any material that the student might need.