

ABISHEK NAGARAJAN

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PROFESSIONAL SUMMARY

- Driven graduate student with a passion toward cloud computing, having industrial experience in *DevOps* and *Cloud Architecture* design.
- Pursuing MS in Telecommunications to understand lower layers of networking stack and study architecture of enterprise networks.
- Looking for opportunities to demonstrate relevant skills gained via industry and academia.

EDUCATION

Rochester Institute of Technology, Rochester, NY Aug 2019 – May 2021 (Expected)
MS in *Telecommunications Engineering Technology* GPA: 4.0 / 4.0
Coursework: Network Planning and Design, Advanced Large-scale Computing, Database Design and Implementation, Next Generation Networks, Applied Machine Learning, Telecommunications Concepts.

PES Institute of Technology, Bengaluru, Karnataka, India Aug 2013 - May 2017
Bachelor of Engineering in *Electrical and Electronics Engineering*

TECHNICAL SKILLS

<i>Programming Languages</i>	<i>Proficient</i> - Python, Shell scripting, C <i>Medium Proficiency</i> – GoLang, C++
<i>Operating Systems</i>	Ubuntu, Debian, CentOS, RHEL
<i>Cloud Platforms</i>	Amazon Web Services, Google Cloud Platform, Microsoft Azure
<i>Containers and Orchestration</i>	Docker, Amazon ECS, Kubernetes
<i>DevOps Tools</i>	Jenkins, Terraform, Google Cloud Build, Packer, AWS CodeBuild
<i>Other Tools/Services</i>	Kafka, gRPC, Avro, Git, Nginx, Regular Expressions, Async/Await, Threading, Queuing

WORK EXPERIENCE

Software Engineer Intern – NALEJ /knowledge/ Corporation, Menlo Park, CA May 2020 – Aug 2020

- Developed multiple PoCs including *EdgeChromium* for edge to cloud (E2C) and C2E data pipelining. Also built notion of *edge-stack* and technologies required in an edge-stack.
- Developed tool to convert *docker-compose.yml* files to organization's proprietary format - the *application descriptor*.
- Performed QA Audit of product by deploying it to Kubernetes and evaluating complexity of deployment process.
- Assessed multiple storage solutions including *Min-io*, *Rook* and *Ceph* to extend product's capabilities.
- Assisted in extending capabilities of *EdgeAstral*, a tool for E2C-C2E data pipelining. Gained hands-on experience with *Apache Kafka*, *gRPC* and data serialization using *Avro*.
- Studied and presented multiple emerging technologies (suitable for edge computing) to engineering team - including *Neo4j*, *Strimzi* and *Ludwig*.

Research Assistant - Global Cybersecurity Institute at RIT, Rochester, NY March 2020 – May 2020

- Assisted in recreating network architecture of organizations targeted by cyber-attacks.
- Conducted research on several cyber-attacks and developed network mapping diagrams.

Senior DevOps Engineer - Scapic Innovations (Flipkart Group), Bengaluru, India May 2017- June 2019
Managed architecture of organization's cloud infrastructure and CI/CD pipeline. *Summary:*

- Setup entire production infrastructure on *Amazon Web Services* and *Google Cloud* – using *Elastic Container Service*, *Elastic Load Balancer*, *Cloudfront*, *Lambda*, *Kubernetes Engine*.
- Setup CI/CD pipeline using Jenkins - with tests running on each commit and continuous delivery offered via a pull-request builder.
- Developed advanced CI/CD tools including an *Automatic Pull-Request builder* and a *Smart time tracker*.
- Architected a *robust* and *secure* platform for the *backend server* – with only *private* (in VPC) access to the *database*, *Redis* and *ElasticSearch* services.
- Generated tags and categorized over *10,000 assets*, using Python scripts.
- Assisted in setting up cloud infrastructure for MNCs - including Sony Entertainment and Viacom.
- Developed *Terraform* scripts for re-building production database.

Cisco Systems, Bengaluru, India - **Data Center Intern** Jun 2016 — Aug 2016

- Developed knowledge and gained hands-on experience with Data Centers.
- Worked on Cisco's Application Centric Infrastructure (Cisco's take on Software Defined Networking).

RELEVANT PROJECTS

Project Manager as a Service Bot (*Proprietary tool built for Scaptic Innovations*)

Bot that tracks time spent on GitHub tasks, using information received via minimal communication with user.

Uses commit history, comments, and labels to achieve this.

Technologies used: Threading, scheduling, Redis and Cron jobs.

Pull Request Builder (*Proprietary tool built for Scaptic Innovations*)

Developed tool that automatically communicates with GitHub's API and generates an exact replica of a production-based build, for each Pull Request raised. Written in Python and Bash, it uses an NGINX reverse proxy, pointing to multiple Docker containers. Also supports parallel builds, leveraging Queuing and Threading.

Research Project on Micro-Services

Conducted research on the performance (and efficiency) of deploying micro-services in different cloud platforms, including AWS Elastic Beanstalk, Kubernetes, and AWS Lambda. Tests included API tests, load tests and cost analysis (efficiency) for each platform.

USDZ Converter (*Proprietary tool built for Scaptic Innovations*)

Developed from scratch an [API](#) that converts any 3D format to Apple's AR-ready USDZ format.

Currently deployed on Kubernetes, it uses a master-slave architecture communicating via Redis pub-sub.

WiFi DeAuth Frame Sniffer

A simple tool that notifies a user of an unusually high number of WiFi DeAuthentication frames in an area.

The tool was written in C, using the libpcap library. Link – <https://github.com/chargz/DeauthSniff>

SSH Group Command

The tool allows running a common Linux command on a set of machines (specified as IP addresses).

It was written in Python and used the pxssh module. Link - <https://github.com/chargz/GroupCommand>

Automated Parking System

Final Undergraduate Project

Sensors placed on parking slots would send free slot data to the cloud, this data could be accessed on a URL:

<https://pesit-parking.github.io>

Written in C and NodeJS and made use of the Websockets protocol.
