Arka Pal

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Summary

Offers strong technical skills in Cloud Computing and Computer Networking. Possesses analytical abilities needed to design and orchestrate Cloud Computing infrastructure. Has completed professional certifications from Amazon Web Services (AWS), projects in Computer Networking and has experience in working with Python and Shell.

Education

University of Illinois - Chicago (UIC), Chicago, IL
Master of Science in Computer Science **(Expected: May 2024)**
Related coursework: Algorithms, Computer Networking, Cybersecurity.

K.J. Somaiya College of Engineering (KJSCE), University of Mumbai, India
Bachelor of Technology **(August 2018 – May 2022)**
Electronics and Communication Engineering
Related coursework: Data Structures and Algorithms, Computer Networking, Cloud Computing.

Certifications

- **Cloud Computing:** AWS Certified Solutions Architect Associate (SAA-C02), AWS Certified Cloud Practitioner (CLF-C01).
- **Computer Networking:** CCNA: Enterprise Networking, Security, and Automation; CCNA: Switching, Routing, and Wireless Essentials.

Skills

- **Cloud technologies:** S3, Cloudfront, DynamoDB, Lambda Functions, API Gateway, IAM, Cloudformation, EC2, VPC, ALB/ELB, EKS.
- **Computer Networking:** DNS, DHCP, OSPF, LACP, IPSEC, GRE (GRE over IPSEC), VLANs, NAT44, experience with Cisco IOS.
- **General:** Python and Shell scripting.
- **Software Development:** Python, Flask, BeautifulSoup, Requests, Pandas, HTML, CSS, Javascript, Bootstrap.

Academic Projects

AWS Cloudresume Challenge, UIC (December 2022 – January 2023)
- Created a static website hosted on an S3 bucket, served through a Cloudfront distribution.
- Architected a backend consisting of the services of DynamoDB, API Gateway, Lambda Functions and requisite IAM roles (for temporary access) to show the number of visitors to the front-end (website).
- Defined all of the back-end infrastructure in Cloudformation templates to implement an IaC paradigm for the project.
- Built front-end website to host an online version of personal resume as suggested by the project guidelines.

SDN Firewall, KJSCE (August 2021 – April 2022)
- Created a firewall for Software-defined networks from scratch, using rule-based prevention logic to block against ARP and DDoS attacks on the Controller.
- Utilised both POX and RYU controller implementations on Python.

GRE-over-IPSec VPN, KJSCE (January 2021 – July 2021)
- Designed and implemented (as a simulation), a GRE-over-IPSEC VPN between two enterprise endpoints using virtual Cisco infrastructure.
- Utilised network technologies like DNS, FTP, VLANs, OSPF, GRE, IPSEC, LACP, NAT44.
- Link to report: Report

Experience

Project Intern | TATA Projects, Mumbai, India (August 2020 – September 2020)

- Built an application to collect details on various vehicles from a hosted database using APIs.
- Ensured that the output was compatible with the various parameters set for monitoring.

Software Intern | Enhanced Software Solutions, Mumbai, India (December 2019 – January 2020)
- Designed and implemented a web application to track resources spent on off-site visits by employees
- Developed using Flask, SQLite, HTML, CSS and Bootstrap.

Technical Head | IETE, KJSCE chapter, Mumbai, India (July 2020 – July 2021)
- Led efforts for the ideation to the execution of technical projects and material for technical events and technical seminars.

Intern | Synergy Community, Mumbai, India (August 2020 – September 2020)
- Prepared documentation and course material for learning and understanding the concepts of the Flask micro-framework.
- Mentored students on the material and interacted with them to improve their skill in utilising the framework.