

# S. Nandhakumar

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## PROFILE

Motivated and detail-oriented fresher with a 6-month certification in Cloud Computing and DevOps. Equipped with foundational knowledge and practical skills in cloud platforms, CI/CD pipelines, and infrastructure automation, gained through hands-on coursework and projects. Eager to apply technical expertise in real-world scenarios, with a commitment to continuous learning and professional growth. Strong problem-solving abilities and a collaborative approach, ready to contribute to innovative teams.

## SKILLS

Scripting: Linux Shell scripting | Declarative pipeline | YAML | HCL

Tools: Git | Jenkins | Docker | Ansible | Terraform | Kubernetes

AWS Services : EC2 | VPC | S3 | IAM | Lambda | Elastic Beanstalk |

CloudFormation | SNS | SQS | SES | CloudWatch | CloudFront | CloudTrail | Route 53

## PROJECTS

### Cloud Computing Project: Deploying a Multi-Tier Website using AWS EC2

- Deployed a multi-tier architecture on AWS for a PHP-based website with a MySQL database
- Configured Amazon EC2 instances with Auto Scaling to ensure high availability and scalability
- Implemented an Amazon RDS instance, creating and managing the database and tables
- Enabled secure communication between EC2 and RDS instances while allowing traffic management
- Demonstrated expertise in infrastructure deployment and optimization using AWS services

### Cloud Computing Project: Publishing Amazon SNS Messages Privately

- Developed a secure platform for a hospital to send patient reports online via Amazon SNS, ensuring privacy and security.
- Used AWS CloudFormation to create a Virtual Private Cloud (VPC) for hosting messages within an Amazon EC2 instance.
- Connected the VPC to AWS SNS for secure message publishing and improved delivery reliability.
- Enabled patients to access reports via mobile notifications, maintaining confidentiality in compliance with industry standards.

### DevOps Capstone Project: Implementing DevOps Lifecycle

- Designed and implemented a complete DevOps lifecycle for a product-based company, Abode Software.
- Installed necessary software on machines using configuration management tools to streamline the environment setup.
- Developed and implemented a Git workflow, ensuring efficient collaboration and version control.
- Configured CodeBuild for automated triggers:

- Master branch commits: Test and deploy to production.
- Develop branch commits: Test without deployment to production.
- Containerized the application using Docker, utilizing the pre-built container hshar/webapp and ensuring proper placement in /var/www/html.
- Built a Jenkins pipeline with multiple stages for seamless automation:
- **Job1:** Build
- **Job2:** Test
- **Job3:** Deploy to production

**DevOps Capstone Project: Automating Deployment with Kubernetes and Terraform** • Implemented a complete DevOps lifecycle for Analytics Pvt Ltd, automating infrastructure creation and configuration on AWS. • Developed a Git workflow ensuring version control and organized releases. • Built custom Docker images and containerized the application using a Dockerfile, deploying it on Kubernetes with 2 replicas for high availability. • Configured a NodePort service on port 30008 to manage external access. • Automated the lifecycle using a Jenkins pipeline with build, test, and deployment stages. • Utilized Terraform for provisioning infrastructure on AWS and Ansible for configuration management to install necessary software on servers. • Integrated Docker and Kubernetes across multiple nodes, ensuring scalability and operational efficiency.

**Azure Project: Implementing Traffic Manager and Application Gateway** • Designed and deployed a multi-region architecture using Azure Traffic Manager for optimal traffic distribution between Central US and West US regions. • Configured Azure Application Gateway to route traffic to specific pages: home page, upload page for Azure Blob Storage, and static error pages for 403/502 errors. • Deployed virtual machines within VNets across both regions, connected through VNet-to-VNet peering for seamless communication. • Automated deployment using provided GitHub repository scripts to set up home and upload pages on respective VMs. • Configured storage accounts for hosting static error pages and creating upload containers for file management. • Ensured end-to-end architecture functionality, integrating Traffic Manager with application gateways in both regions.

**Project: Analyzing U.S. Honey Production Data** • Conducted a comprehensive analysis of U.S. honey production data spanning 27 years, identifying trends and insights. • Determined rarely contributing states and top honey-producing states to understand production patterns. • Analyzed changes in mean average honey prices over time and identified the year with the highest production. • Implemented data cleaning and exploratory data analysis using Python libraries, including Pandas, Matplotlib, and Seaborn. • Visualized key insights with bar plots and pie charts to effectively communicate findings and trends.

## CERTIFICATIONS

1. **Cloud Computing and DevOps Certification** Successfully completed a 6-month course, gaining expertise in cloud platforms, CI/CD pipelines, and infrastructure automation.
2. **AWS Course Completion Certificate** Demonstrated proficiency in AWS services, including designing and managing scalable, secure, and reliable cloud solutions.
3. **DevOps Course Certificate** Acquired hands-on experience in implementing CI/CD pipelines, containerization, and automation tools.
4. **Azure Administrator Course (AZ-103/AZ-104) Certification** Mastered core Azure services, virtual networks, and cloud infrastructure management in alignment with administrator-level roles.
5. **Data Science Course Certificate** Gained foundational skills in data analytics, visualization, and predictive modeling using Python and advanced tools.

## EDUCATION

- **Bachelor of Commerce (B.Com)** – Vysya College, [2016]
- **Certification in Cloud Computing and DevOps** – Intellipaat