**Executive SUMMARY**: \*\*\*\* SC Cleared \*\*\*\*\*

* 22+ years of IT industry experience with roles spanning across partner alliances, strategy creation, cloud project management, pricing/costing, customer engagement with leading service providers worldwide.
* Linux Performance Tuning for Low-Latency Servers.
* Data Pipelines using GCP DataProc, DataFlow, Azure HDInsights, Azure DataFactory, AWS SageMaker, AWS Glue, Databricks, DBT, DataForm, Google CloudComposer.
* Python Data Engineer worked on libraries like Pandas, NumPy, SciPy, Scikit-Learn, StatsModel, PySpark, Apache Beam, Airflow DAGs.
* Machine Learning Models like Train-Test, Logistic Regression, Linear Regression, Decision Tree models, K-Fold Cross, MonteCarlo Method, VaR, CVaR, RAPL.
* Experience in heading project on wide range of Cloud technologies on (AWS/Azure/Google Cloud) like designed and planned Cloud-Transformation/Migration projects, Digital-Transformation, Cloud-Modernization projects, Hybrid Cloud projects
* Designed Well-architected infrastructure with High availability and Scalability and CIS Security compliance.
* Executed number of multi-million dollar projects from pre-sales to final delivery.
* Designed cost Model for Cloud infrastructure, Cloud Transformation assessment using AWS/Azure MAP program, project pricing plan, project execution plan and build upgrade strategy.

**Experience and Accomplishments**

**Data Engineer & DevOps Consultant, UK – Contract**

**Lloyds Bank Feb 2023 – Till Date**

* The project is to migrate and modernize Kubernetes Platform formal Lloyds Bank Applications to Google Cloud GKE.
* Implemented GCP Pub/Sub Topics Setup for Streaming Data Pipeline. Setup of GCP Kafka for ingestion pipeline in GCP VMs to setup Topics and subscriptions.
* Worked on ETL pipeline on **GCP DataProc with PySpark** on large DataFrames to transform Markets Orders (shared from partners) and load into **Big Query DataSets and Tables** and Google Storage in Parquet files.
* Worked on **DBT data pipeline** in BigQuery to transform large BigQuery Tables on Market Data into **Big Query Authorised Views** for multi-projects to access relevant Data
* Implemented ETL Pipeline with Apache **AirFlow in Google Cloud Composer** with GKE integrated to run jobs, using Advanced **Pandas PyData, NumPy and SciPy libraries**. This data pipelines is used to ingest and transform shared banking data between multiple project teams for analysis.
* Designed Multi GCP Project Landing zones for Transformation Data Pipeline with GCP Cloud Composer (**Airflow DAGs pipeline**) using Python Data Pipeline repos and Terraform IaC to setup infrastructure.
* Also designed Multi GCP Project Landing Zone for DataProc Data Pipeline for PySpark repos with Terraform IaC and DataFlow Ingestion Pipeline for Apache Beam Codebase with Terraform IaC.
* Design been presented to Business Team and Stakeholders Istio GKE Landing Zone which includes GKE Network Design, Virtual Services Design, Pod Design, Multi-Cluster Istio Setup.
* Docker Images Pipeline setup and Docker Image Software stacks setup. Designed and implemented GKE deployment with Terraform and Helm Charts.
* Worked on FinOps for Cost Estimation for 3 years ARR (Annual Run Rate). Contributed to SOW for forth coming features.
* Been a Feature Lead for all new features coming into Kubernetes, like Multi-Cluster Setup, Multi-Control Plane Setup, Istio Shared Plane setup, Filestore NFS Shared Files Setup, Anthos Config Management Setup, Pod Security Policies Setup.
* Jenkins pipeline implementation with Groovy and Shared Library implementation of common shared libraries.

**Data Engineer Consultant, UK – Contract**

**Natwest Markets June 2021 – Dec 2022**

* The project is to migrate and modernise Market Risk Calculator Applications and Single Resilient Store Application from Data Center to Google Cloud.
* Developed **DataProc PySpark** modules to process BigQuery tables (Market Data) for **VaR(Value at Risk), CVaR, MonteCarlo** methods.
* Setup pipeline to deploy **Apache Beam** Jobs to **Google Cloud DataFlow** to ingest data from flat files into BigQuery Tables and GCS Parquet files.
* Implemented **DataForm** Data Pipeline to transform BigQuery Tables into **BigQuery Authorised Views** for other projects to access.
* Implemented Ingestion Pipeline in **GCP DataFlow (with Apache Beam in Python)** to ingest data from Google Pub/Sub topics, AWS S3 Buckets and load it into BigQuery Tables. Transform code written in Python on Apache Beam DataFlow.
* Setup of Google Cloud DataProc for **PySpark** jobs. Built deployment pipeline to place PySpark artefacts and submit PySpark Jobs with Terraform.
* Design and Setup **Google Cloud Composer** to deploy **Airflow DAGs.** Built Pipeline to deploy DAGs with Terraform.
* Developed **Python** **DAGs** for process ingested Market Data in BigQuery Tables and Parquet Data files. DAGs to perform Data Ingestion and Transformation pipeline with Python **Pandas, numPy and Scikit-learn** to process Market Data and evaluate Risk Model.
* Low latency performance tuning for high performance linux server. Tuning Kernel Parameters, compile Linux kernel modules for performance.
* Design and development GCP Deployment of GCP DataProc for **MarketRisk Applications** using Terraform.
* Manage and Trigger **Spark Jobs** for Batch Tests using YARN RM and other Banking Application.
* Designed and maintaining **GKE deployments** for Market Risk Applications using **Kustomise** and **Flux CD**.
* Provided PoC, Demo to stake holders on new deployments and advantages.
* Update of all Linux Instances with OS patches, compile libraries for performance and update.

**Data Engineer Consultant and Cloud Architect Consultant, UK – Perm**

**Cognizant UK – Client: FCA UK Jan 2021 – May 2021**

* Worked on Data Transformation pipeline with Python **Pandas, numPy and Scikit-learn, PySpark** to process FCA Data compliance data and evaluate Model.
* Have implement data pipeline using machine learning models like **Train-Test, Logistic Regression, Linear Regression, Decision Tree models** with **Scikit**, **StatsModel.**
* Build ETL Pipeline with **AWS EMR** for **PySpark** to extract pdf and text documents into **AWS RedShift datasets**.
* Used **AWS Glue** to ingest data from On-Prem sources from text files .
* Setup of **AWS SageMaker** for Data Science Team and support them with upgrade and deployment pipeline of code through Aws CodeBuild pipelines.
* Implement Ingestion and Transformation Pipeline for **AWS SageMaker.**
* Setup of pipeline to deploy/configure AWS Kinesis Shards for Data Stream using Python.
* Planning and implementing Account structure using AWS Control Tower, Service Catalogs.
* Reviewed, designed and implemented RBAC policy and roles for AWS Services.
* Architectured and setup of **AWS DataLake** pipelines with AWS DataSync, AWS Glue, AWS Kinesis, AWS Kafka (for Consumer Services) and AWS Lambda (for processing). Managed Deep Leaning AMIs and packages.
* Developed Configuration Management of all AWS Resources and VM Instances updates/configuration using Chef Scripts. Managed and lead review and close quality of Chef scripts.

**Cloud Architect Consultant, UK – Perm**

**Cognizant UK – Client: Reed Expo UK March 2020 – Dec 2020**

* Working as a Cloud Architect for Cloud-Transformation project, to move all Business Unit Servers/Services across the world to AWS Cloud. Carried out complete AWS MAP assessment using **Cloudamize** tool.
* Built **AWS Kafka** setup producer and add topics and make it available for consumers.
* Wrote **AWS Sagemaker pipelines DAGs** for ETL to process customer exhibitions data, which further be used by data scientists team.
* Setup/Build of Data Science AWS Images for Data Science Workloads for Deep Learning AMIs.
* Setup of pipeline to deploy/configure AW Kinesis Shards for Data Stream using Python.
* Enabling/Adhering to Security and Risk Compliances/Audit like CIS with **Qualys Scan**, **ISO 27001**.
* Designed and built complete AWS architecture with multi-account and shared service account with well-architectured approach. Used **AWS SMS (Server Migration Service)** for VMware workloads and **CloudEndure** to migrate Servers for Non-VMware servers.
* Used **Terraform** to build infrastructure and **Ansible** to deploy patches/applications config to Servers. Have setup Backup/Restore with **AWS Backup Service**.
* Migrated most of the SQLServer Databases to RDS instances with **AWS DMS (Database Migration Service)**.
* Presented from concept to architecture. Hosted number of meetings with C-level clients for Cloud architecture and assessment.
* Planned and architecture AWS DataLake project. Migration of Big Data store from Hadoop to AWS RedShift. Setup AWS Glue to migrate data to AWS RedShift.
* Plan and setup pf AWS Data Lake with AWS Kafka, AWS Kinesis, AWS Lambda, AWS ElastiSearch and many EC2 Instances for various apps. All setup with multi-account architecture and secured with RBAC policies, firewalls.
* Managed number of public websites through Ansible scripts. These public sites had complex web stacks like Nginx/HA Proxy/Varnish Cache/ModSecurity/Apache/Tomcat. Managed SSL Certificates.
* Setup **AWS Data Sync and AWS FSx** file share to move all office files to AWS cloud.

**Cloud Architect Consultant, UK – Perm**

**SnowSoftware UK Nov 2019 – March 2020**

* Designed and architected **Azure cloud** infrastructure for SnowSoftware Inventory/Asset management system, used Kubernetes with **Helm Charts (AKS)** and **Istio Service Mesh**.
* Build Data Pipeline for migration of On-Prem MS-SQL DB to Azure SQL Services using **Azure Data Factory** as ETL.
* Setup of **Azure Data Factory** for Data analytics team. Setup of ML Pipelines for Data Science Engineers.
* Setup of Big Data migration from On-premises servers to **Azure Data Lake** Storage.
* Planned and Build **Azure DataLake** with various Data sources from On-Prem like MS-SQL, AWS S3 buckets, Kafka Streaming etc..,
* Built Azure Data Catalog for all data source objects.
* Built Ingestion Pipeline in **Azure Datafactory** to ingest datasets in **Azure SQL** and to **Azure Storage** in Parquet files.
* Worked in number of ETL pipelines in **Azure Databricks/HDInsights** using **PySpark, NumPy, Pandas** to Load and Transform company specific data into new staging Azure SQL tables.
* Add Azure Kafka stream connecter to Azure Databricks to transform data stream into Azure SQL and Azure Storage in Parquet files.
* **AWS**  for newer development projects which simplified management of releases.
* Build **Azure Databricks** setup to process all companies assets data for analytics and predictions using PySpark.
* Created a Cost Model for the Cloud Infrastructure to Business for their Budget estimates. (This model saved company 70% of cost from their traditional Datacenter model)
* Created and provided Cloud infrastructure expense chart to business/finance which gives details on expenditure on cloud to run it for 3 years.
* Setup and managed **Jenkins** Pipelines for Development automated releases. Wrote and managed Groovy scripts to build pipelines. Setup and management of Jenkins VMs in an isolated secured Resource Groups.
* Had a number of Third-party cloud security products engagement like Q-Radar/Splunk and Observability products like **Elastic.io/Logz.io**/CloudReach to integrate with our Cloud infrastructure.
* Setup of Log Analytics and Monitoring tools like **Prometheus/Grafana** and **ElasticSearch/FileBeat**.
* Initial project plan, execution, pricing/budget allocation and resource planning.
* Adhere to **CIS Security** compliance with **Qualys Scan and Pen Tested** Infrastructure with third-party company.

**Cloud DevOps Lead, UK – Perm**

**Deloitte UK Sept 2019 – Nov 2019**

* Initial DevOps pipeline setup with Google Cloud Build with Docker for Data Science Python Backend. Initial GCP account setup of Developer Team. Initial Setup Python Backend Setup on Google App Engine.
* Setup of Google Cloud **DataFlow** for Machine Learning Team and building ML Pipeline for code deployment.
* For the Java Data Science team, setup of Google Cloud **DataProc** with Apache Spark and PySpark pipelines.
* Setup of **Kubernetes infrastructure** on **Google Kubernetes Engine** for Python Backend Service.
* Used Helm Charts to deploy and build Kubernetes infrastructure. Used Istio for Service Mesh/Discovery.
* Setup of **KubeFlow ML Engine** to run Data Science Workloads.
* Build complete GCP Infrastructure with Terraform like VPC, Subnets, Security Groups and Traffic Manager.

**Solution Architect Consultant, UK – Perm**

**Cognizant UK, Client: Telefonica O2 UK Mar 2019 – Sept 2019**

* Designed and architected Three-tier Web layered cloud migration infrastructure, used Kubernetes EKS here.
* Attended Business kick-off meeting and provided Cloud Migration Project estimation to Business team.
* Worked on project costing and AWS Cloud pricing to have Cloud migration execution.
* Setup of IAM for AWS Cloud DevOps and Operations Team.
* Planned and setup the cost alerts to mitigate over-budgeting of project.
* Part of network design review team, whenever upgrades/new installations are planned.
* Initial project assessment and project planning for Cloud transformation and creation of SOW (Statement of Work).
* Brought in strict Security Guidelines in Cloud project and with DevSecOps in place.
* Built Cloud architecture High Level Design and Low-level design and headed the team of 5 DevOps to execute the project.
* Setup of KubeFlow for Data Analytics Workflows on AWS Kubernetes.
* Setup of Splunk Cloud Servers for Cloud Log Analytics. Setup of Alerts and Remediation of Cloud issues.

**Solution Architect, CodeStart Ltd UK - Contract**

**Various Projects. Feb 2017 – Mar 2019**

* Worked with various clients listed below during this period
* **Shell Oil and Gas (Nov 2018 – Mar 2019)**
  + Architected a Backend Service for Shell Recharge App with NodeJS on Azure Cloud.
  + Built the infrastructure for Data analytics pipelines/workloads with Azure DataFactory and Azure DataLake for Shell Oil Refineries and Oil Wells.
  + Configuration of Azure AD for Shell Authentication.
  + Setup of Scalable **Airflow ML Platform** for Data Science Engineer to deploy Python ML Jobs. Provided Guidance and gave Demo on how to use **Airflow** efficiently and simply deployment pipeline.
  + Solution architected and configured VNet, VNet Peering, NATs, Traffic Manager and many others in Resource group to create mutli-zone HA cloud. Along with all Immutable containers/resources. No ssh logins to any of the VMs, only necessary ports open like (80/443).
  + Setup of Kubernetes for Development team Backend Servers, to reduce testing costs.
  + Used complete IaC (Infrastructure as Code) with ARM Templates, no configuration was done through Azure WebUI.
  + Configure Azure Functions for Serverless API Endpoint of current project.
  + Used DevSecOps methodology by applying complete IaC (Infrastructure as Code).
  + Actively involved in discussion with business team for better and simpler cloud architecture solution that suits business.
  + Support number of other dev team with Dev Pipeline and educate them about using it.
* **Centrica Ltd/British Gas (Feb 2018 – Oct 2018)**
  + Architected a new Smart Gas Mobile App for Centrica. Had a team of Java Developers to build microservices and React-Native developers for the Mobile app.
  + Solution architected and configured VPCs (three-tier architecture) with multi-site HA zones.
  + Configuration of Kubernetes with Kops for infrastructure for Java Backend API Servers.
  + Security applied in architecture with NATs, Route Table, Security Groups and Immutable Containers/Dockers.
  + Involved in Business discussion to understand or take inputs and make the business understand the cloud architecture and setup
  + Configured and setup of VPS on AWS for dedicated servers, and added configuration automation using Ansible.
  + Write DockerFile for multi container deployments when are done through Terraform Kubernetes.
  + Configure and setup of VPC using Kubernetes and Ansible for Java Microservices Backend Servers. Added cloud automation through Kubernetes for configuration.
  + Created VPC, Internet Gateway, subnets and route tables using Amazon VPC Service.
  + Experience in containerizing and migrating application to Kubernetes.
  + Security hardening of docker containers through dockerfile config, port scan and user group permissions, ssh keys.
* **NationWide Ltd (Oct 2017 – Jan 2018)**
  + Mainly architected NationWide’s new product range called Remortgage and Mortgage Switcher product. Worked with .Net Developers, DevOps team and UX designers to bring out a strong banking product.
  + Setup of Code Pipeline for Front-End team on AWS CodeBuild.
  + Planned and implemented Migration of .Net and Java Backend Applications on IBM e-Servers to AWS Cloud.
  + Build AWS Cloud Infrastructure with CloudFormation
  + Review and plan other DevOps scripts.
* **Hushkeys Ltd (June 2017 – Oct 2017)**
  + This was a startup company hosting a hushkey.com (social media webapp), here as a solution architect, did complete project architecture which includes Front-End technologies like ReactJS and NodeJS at the backend. Also we tried the new graph database Neo4j.
* **Lloyds Bank (April 2017 – Jun 2017)**
  + Architected and managed complete Cloud Migration project of moving all Java Microservices to AWS Cloud.
  + Added Kubernetes automation for scaling and setup for docker containers with dockfile.
  + Subnet setup and iptables configuration for security.
  + Designed AWS Cloud Formation templates to create customized VPC, subnets, NAT to ensure successful deployment of Web applications and database templates.
  + Created VPC, Internet Gateway, subnets and route tables using Amazon VPC Service.
* **TicTrac (Feb 2017 – April 2017)** –
  + Architected their backed system with Python Django to serve Sports and Health awareness products on AWS Cloud
  + Deployment of build on AWS containers, maintain development build pipeline on Jenkins.
  + Tictrac make mobile app for Sports and Health awareness products.
  + Used Redux with React as Middleware.
  + Developed many feature like post comments, circular graph for running stats, redesign of pages by giving suggestions to Product Owner and UX designer.

**IT Consultant, Petards Ltd UK - Contract**

**Advanced Camera Encoder, July 2016 – Feb 2017**

* This was AWS IOT project where the ICM (Intelligent Train Control Manager) which is an Embedded Hardware installed on all train cars send secured GPS/train speed and metrics data to AWS IOT.
* Setup of whole AWS cloud infrastructure for this working along with Embedded Developers.
* Improvised Camera Start-up(Embedded Linux) under 40sec, by optimizing code, parallelizing all function modules and kernel tuning.

**Technical Lead, Ericsson Television UK – Contract**

**Advanced Video Processor (AVP) Aug 2014 – July 2016**

* Lead a Migration project where the Video Transcoder on Datacenters where migrated to AWS Cloud with High Performance Computing of Realtime Video Streams
* Setup of Management Console to handle all Video Transcoders remotely and securely.

**C/C++ Developer, IP Access UK**

**Home Node B Gateway, Aug 2011 – July 2014**

* HnB Gateway is a converged ATCA server that provides interface for Femto Access Points/Cells to Core Networks like MSCs and SGSNs. Interfaces used here are IuH towards Femto Access Points, IuCS towards MSCs and IuPS towards SGSN. Protocols involved RANAP, RUA, SCTP, M3UA, GTPu, RTP. Involved in Architecture and coding of ATCA platform component in C++. Involved in coding to RANAP protocol stack in C. Wrote character device driver for custom mode to store/Retrieve RANAP Calls Data.

**Technical Lead, Nokia Siemens Networks India**

**HiQ4200/8000 (Softswitch) Nov 2008 – July 2011**

* hiQ 8000 is a feature-rich carrier grade VoIP switch that can be deployed as a class 5 softswitch, media/trunking gateway controller and voice application server in IMS domain.
* Lead the development team in building up software expertise and setting up lab environment (Servers like Netra x4200, Solaris 10 Server, Solid DB, Ulticom SS7 Stack) covering VoIP solutions like SIP, MGCP, MEGACO and IMS. Interface to the customer for answering issues on telecom equipment like hiG1200 and hiG1800 Media Gateways, hiE9200 Media Gateway Controllers. PSTN to VoIP call enhancements using M3UA/SIGTRAN. Setup of ISUP call and updation to ISUP message parameters.

**Technical Lead, Nokia Siemens Networks, India**

**TSP (Telco Service Platform),** Feb 2005 **–** Oct 2008

* TSP is a middleware platform for Telecom Network Elements like HLR(Home Location Register), IN/CC (Intelligent Networks also called Charging & Care). TSP provides a number of Service components to the applications like IN, HLR, HiPath, NEXTA etc..,
* As a technical lead, extensively worked on developing various C/C++ libraries/multi-process for 2G TCAP messages, porting code to ATCA hardware, implementation of call flow for RANaP over SCCP-AAL. The project was hugely based in large Linux systems with multi-process/multi-threading, Re-designed a component called Event Management.

**Software Engineer, IBM Global Services India,** Jan 2004 – Jan 2005

**CADM (Customer Account Data Management), Client: AT & T Telecom**

* The Customer Account Data Management is a project of AT&T to provide its customers by the new Universal Platform include holistic customer management and servicing, and customized invoicing and reporting.
* Created core libraries in C++/Pro\*C and application frameworks to increase database query speed, stability and manageability.
* Heavily involved in designing and writing scripts to create cron batches to extract Oracle Reports.

**Systems Analyst, Sonata Software Ltd,** May 2003 – Jan 2004

**CODIS (Churchill Online Direct Insurance System), Churchill Insurance, U.K.** (Deputation to Delhi)

* Churchill Insurance system named CODIS (Churchill Online Direct Insurance System is a whole Insurance system which has functionalities like Preparing Quotations, Claiming for Insurance, Accounts, Renewals, Creating of Insurance Documents, etc.
* Created PL/SQL procedures, including program to do large select and then pivot unknown amount of data from vertical to horizontal.
* Developed several Cron scripts to move data around different servers.
* Solely designed and developed **Data Porting Utility** application from scratch using shell script, which creates a new database and copies data from existing for development and testing environment.
* Developed PL/SQL procedures, triggers for number of change requests.

**Software Developer, ComCreation Technologies,** Oct 2001 – May 2003

**Wireless Pricing Application, RedBat Inc., USA.**

* This product facilitates the subscriber to keep track of his spending of his currency. The subscriber will be able to estimate his spending before making a long distance calls. The Pricing Application provides as graphical image to the user on the handset to represent the pricing information. It also has a feature of warning the user when is crosses certain amount of his use, so that user will be aware of the calls made by him.
* Developed a Pricing Calculation Engine in C++ using Message queues and Shared Memory.
* Was part of core design team to create multi-process server code.

**Software Trainee, Apar Technologies, Bangalore,** Jan 2001 – May 2001

**e-Integration System, India MarketsOnline.com**

* **E**-Integration a B2B project initiated by India MarketsOnline.com. The purpose of the project was to upload encrypted data in batch format from offline Database Server to the online Web Server. Vendors will be able to view or post RFQ, Purchase Orders, Invoice, Quotation etc**..,**
* Development of the JDBC Connectivity Framework, which collect the offline data and moves it to IMO Webserver.
* Developed an Encrypt/Decrypt module for Encryption and Decryption of data.
* Interacted with client for Business Requirement collect for basic design of the project.
* I was the main mastermind for this project design and initiation.

**Personal Profile**

**Name** HARSHA A. PATANKAR

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**Education** Bachelor of Engineering

**Year of Passing** September 2000

**University** Bangalore University

**Percentage (Aggregate)** **71%**

**VISA Status** British Citizen

**Hobbies:**

* Playing games like Cricket, Badminton, running.
* Reading computer books, articles, latest news on internet.

Date:

Place: Reading (Harsha A. Patankar)