**Satya Kumar Pavan Bodige**

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**Professional Summary:**

* **8 plus Years** of experience as a **Python Developer** with Design, Analysis, Development, Testing, Customisation, Bug fixes, Enhancement, Support and Implementation of various Data validation, stand-alone, client-server enterprise applications using **Python ,** Spark, SAS, R and LAMBDA, Pyspark, AWS Glue, Dynamo DB, S3, AWS API gateway, AWS CloudWatch, XML.
* Specialized in the data preprocessing, modelling, serverless programming and statistical treatment of large volume of experimental data, have an aptitude to transform primary data into strategic & actionable insights
* Managed production support for 60 applications, for continues flow of data for validations and reporting errors
* Extensively worked on AWS implementation issues for USER access, Security permission for accessing S3 buckets for consuming data and implemented the new serverless application-DQS and Migrated SAS Code to Python code for DQS team.
* Developed real-time data processing applications using Amazon Kinesis Data Streams and Kinesis Firehose to handle high-throughput data ingestion and analytics.
* Experienced with full **software development life-cycle (SDLC),** architecting scalable platforms, **object-oriented programming (OOPs)** design.
* Integrated Scala with existing Java codebases, leveraging Scala’s interoperability with Java to enhance existing Java applications.
* Extensively worked on serverless programming applications & serverless micro services (AWS)
* Strong knowledge of wide range statistical tools (**Python, Spark, SAS, R**) and ability to learn new programming.
* Expertise in test automation and continuous delivery of Validation applications, client server applications, web services/REST APIs Testing, with **Python.**
* Designed and implemented scalable database schemas using Amazon DynamoDB to handle high-velocity and high-volume data workloads.
* Deployed AWS infrastructure and resources via automation and pull requests, facilitated by the integration of Terraform with Jenkins.
* Developed Kafka producers and consumers in Python using the confluent-kafka library to publish and consume messages from Kafka topics.
* Experience in writing Sub Queries, Stored Procedures, Triggers, Cursors, and Functions on **MySQL** and **PostgreSQL** database.
* Designed and implemented custom Kinesis Data Analytics applications using SQL for real-time stream processing and data transformation.
* Experience in using **IDE** Tools like **Spyder**, **PyCharm, Eclipse, Net Beans, Py studio** and **Sublime Text.**
* Hands on experience in working with Python libraries including **Pandas and Numpy.**
* Proficient in **SQLite, MySQL and Postgre SQL** databases with **Python.**
* Created RESTFUL API's for several of our Intranet applications using AWS API gateway and Lambdas.
* Extensive experience in system analysis, design, development and implementation of Data validation based and client/server application using Python, LAMBDA, **Pyspark, AWS Glue, Dynamo DB, S3,AWS API gateway, AWS cloudwatch, XML.**
* Used Scala’s JavaConverters and JavaConversions utilities to seamlessly convert between Scala and Java collections.
* Developed and applied effective data modeling techniques for DynamoDB, including single-table design and complex access patterns, to meet specific application requirements.
* Having experienced in **Agile Methodologies**, **Scrum** stories and sprints experience in a **Python** based environment, along with data analytics, data wrangling and Excel data extracts.
* Strong analytical and problem-solving skills, always striving for new knowledge. A person with multi-tasking and organizational skills and high ethical standards.

**Technical Skills:**

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| **Languages:** | Python, SQL, SAS, R |
| **Analytics Software:**  | Python, Pyspark, SAS, R, Excel, SAS Enterprise Miner |
| **IDE’S/Tools:**  | Spyder, Eclipse, PyCharm, Pydev , PowerBI, SAS Enterprise |
| **Databases:**  | MySQL, Oracle, PGSQL, DynamoDB |
| **Cloud** | AWS (Amazon web services), Azure |
| **Methodologies:**  | Agile, Scrum |
| **Operating Systems:**  | Window, UNIX, Linux |

**Professional Experience:**

**Client: Huntington Bank, Denver CO (remote) Sep 2023 – Till Date**

**Role: Sr.Python Developer**

**Project: CloverDx to AWS migration project - Migration of ETL jobs that runs in CloverDx to AWS cloud environment using lambdas for scheduling and running.**

**Responsibilities:**

* Migrated legacy CloverDx application to AWS cloud environment using python scripting resulted in lower costs, and improved data analytics.
* Decompose the ETL’s existing workflows created in CloverDx into smaller, modular tasks that can be executed as Lambda functions using python.
* Developed ETL scripts in **Python** and SQL.
* Designed and implemented scalable NoSQL database schemas for various use cases, including document-oriented (MongoDB), key-value (Redis), column-family (Cassandra), and graph databases (Neo4j).
* Worked with handling and processing complex data flow using Dask Dataframe in **Python, Amazon S3 and MySQL DB.**
* Used Scala build tools such as sbt (Simple Build Tool) for compiling and managing dependencies in Scala projects.
* Designed and developed data pipelines using Kafka Connect to integrate with external systems and databases for seamless data ingestion and extraction.
* Utilized the Boto3 library to integrate Python applications with Kinesis, enabling data ingestion, retrieval, and real-time processing.
* Optimized NoSQL data models to handle high-velocity data ingestion and complex queries, improving data access and retrieval performance.
* Designed and configured data ingestion pipelines to extract data from various sources such as databases, blob storage, S3 and Rest API’s and load it into S3, DynamoDB.
* Improved Performance ,Scalability, Cost efficiency after migrating from CloverDx into AWS made seamless integration which also enhanced the capabilities of ETL workflows.
* Implemented unit testing in Scala using frameworks like ScalaTest or Specs2, alongside Java testing frameworks like JUnit and Mockito.
* Utilized DynamoDB’s provisioned and on-demand capacity modes to efficiently manage throughput and cost.
* Cooperated with Data Warehouse Architects to manage large, complex data workflow.
* Experienced in Python scripting, ETL, Apache Airflow, CI/CD, RDBMS (MySQL/PostgreSQL).
* Experienced in AWS services including lambda, CloudWatch, IAM, AWS Secrets Manager, S3, DynamoDB.
* Utilized AWS scheduling and monitoring capabilities to ensure reliable and efficient data pipelines.
* Implemented error handling and logging mechanisms to detect and resolve issues in data pipelines.
* Conducted performance tuning and optimization of Data pipelines for efficient data processing and reduced latency.
* Conducted performance profiling and analysis to identify bottlenecks and implemented optimizations to enhance Kafka cluster performance.
* Created and maintained Kafka Streams applications for real-time data processing, aggregation, and transformation.
* Created Python scripts and Lambda functions to process data from Kinesis Streams, perform data transformations, and push results to other AWS services.
* Implemented CRUD operations, data aggregation, and complex queries in Python to manage and manipulate data stored in NoSQL databases.
* Cooperated with Data Warehouse Architects to manage large, complex data workflow.
* Collaborated with cross-functional teams to define data integration requirements, data transformations, and data mapping rules

**Environment:** Python, PyUnit, AWS Lambda, API Gateway, DynamoDB, SES, GLUE, SQS, EC2, CloudWatch, CloudFront, Cognito, Terraform, Gitlab, Azure, SQL, HTML, Agile, windows and Linux.

**Client: Ford Motor Company, Detroit MI (remote) Dec 2021 – Aug 2023**

**Role: Sr.Python Developer**

**Project: Migration to AWS Cloud environment - Migration from on-prem(SAS) system to Cloud native application using AWS cloud and python.**

**Responsibilities:**

* Migrated legacy SAS statistical applications to cloud base environment AWS.
* Developed serverless applications using **AWS GLUE, Lambda, S3, SQS, Athena, DynamoDB, APIgateway,**
* Created Restful APIs to integrate and enhance functionalities of the Ford internal data quality application.
* Developed applications from all the services mentioned - **Python, Spark, AWS Lambda, API Gateway, DynamoDB, SES, GLUE, SQS, EC2, CloudWatch**
* Worked on statistical analysis by processing collected data and Data Visualization using Python Pandas, Matplotlib, and Numpy packages
* Proficient in using IDEs such as IntelliJ IDEA and Eclipse for Java and Scala development, with familiarity in debugging and refactoring tools.
* Developed and program python scripts of automation procedure with API and JSON data, based on design documents and business objectives, including developer testing activities, like unit testing, regression testing, integration testing.
* Tuned NoSQL databases for performance by optimizing indexes, partitioning strategies, and query execution plans, resulting in improved query response times and system throughput.
* Developed Python applications using the Boto3 library to interact with DynamoDB for CRUD operations, data querying, and batch processing.
* Key contributor for Improving Scalability, Cost savings, flexibility, and operational efficiency after migrating to AWS.
* Optimized code performance and scalability to handle large datasets efficiently.
* Deployed AWS infrastructure and resources using automation and pull requests by integrating Terraform with Jenkins.
* Configured Kinesis Data Streams with appropriate shard counts and throughput settings to handle varying data volumes and optimize performance.
* Tuned Kafka brokers, producers, and consumers to optimize throughput and latency, including configuration of partitioning, replication, and batching strategies.
* Configured pipelines to trigger Terraform executions based on version control events.
* Developed Python scripts to automate Terraform workflows, including initializing Terraform configurations, generating execution plans, applying changes, and managing Terraform state files.
* Extensive experience in system analysis, design, development and implementation of Data validation based and client/server application using Python, LAMBDA, **Pyspark, AWS Glue, Dynamo DB, S3,AWS API gateway, AWS cloudwatch, XML.**
* Extensively worked on AWS implementation issues for USER access, Security permission for accessing outside and inside S3 buckets for consuming data.
* Also worked on over all infrastructure issues while implementing the new serverless application-DQS.
* Implemented migration tasks from SAS Apps to Python AWS Server less apps
* Worked on server transition and Migration issues with engineering .
* Developed monitoring and notification tools using Python.
* Shell scripting for Secure transport of files via WINSCP
* Rewrite existing SAS applications in Python module to deliver certain format of data.
* Used Pandas API to put the data as time series and in tabular format for east timestamp data manipulation and retrieval.
* Tuned NoSQL databases for performance by optimizing indexes, partitioning strategies, and query execution plans, resulting in improved query response times and system throughput.
* Monitored Kinesis Streams and Firehose delivery streams using AWS CloudWatch, setting up alarms and dashboards to track performance metrics and troubleshoot issues.
* Implemented data ingestion and extraction pipelines in Python to integrate DynamoDB with other data sources and services.
* Managed production support for applications, for continues flow of data for validations and reporting errors
* Created Business Logic using Python to create Planning and Tracking functions.
* FIFO/SQS Queues implemented and tested.
* Optimized FIFO queue to balance load of layouts.
* Developed and applied efficient data modeling techniques for NoSQL databases, including denormalization, embedding, and using secondary indexes to optimize access patterns and query performance.
* Used Jenkins for continuous integration services.
* Wrote validation scripts in SQL to validate data loading.
* Developed complex web, middleware, and back-end systems in Python, SQL for Linux and Windows.
* Created a Git repository and added the project to GitHub.
* Extensively Worked on Prep and deliver of Data files for validation, processing and reporting errors on data files.
* Utilized Agile process and JIRA issue management to track sprint cycles.

**Environment:** Python, Java, Terraform, Jenkins, PyUnit, HTML, JavaScript,Jenkins, AWS Lambda, API Gateway, DynamoDB, SES, GLUE, SQS, EC2, CloudWatch, CloudFront, Cognito, Gitlab, Jira,, SQL, Agile, windows and Linux.

**Client: Fifth Third Bank, Ohio Oct 2020 – Nov 2021**

**Role: Python Developer**

**Project - Online e-consent application - Developed eConsent Banking application which enables users to sign documents online for account opening.**

**Responsibilities:**

* Participated in requirement gathering and analysis phase in documenting the business requirements by conducting meetings with various business users.
* Created a UI for users easy access to documents and as part of cost cutting measures helped bank save a lot on paper.
* Tuned DynamoDB performance by optimizing read and write capacities, using DynamoDB Accelerator (DAX) for in-memory caching, and adjusting indexes and table structures.
* Built Rest APIs using python with Django web framework which handle thousands of requests from web and mobile applications.
* Worked on developing internal testing tools which were written in Python.
* Developed Wrapper in Python for instantiating multi-threaded application and deploy and monitor scalable infrastructure on Amazon web services (AWS).
* Wrote Python scripts to parse XML, CSV and text files and load the data into AWS.
* Worked on Python Open stack API’s used Python scripts to update content in the database and manipulate files.
* Learned and developed applications from all the services mentioned - **Python, Spark, AWS Lambda, API Gateway, DynamoDB, SES, GLUE, SQS, EC2, CloudWatch, CloudFront, Cognito, Gitlab, Jira, Jenkins CI/CD.**
* Developed Business Logic using Python on Django Web Framework.
* Worked with JSON based REST Web services and Amazon Web Services (AWS).
* Created functions and assigned roles in AWS Lambda to run python scripts, and AWS Lambda using java to perform event driven processing.
* Created Python scripts for data migration between NoSQL databases and relational databases or other NoSQL systems, ensuring data integrity and consistency throughout the migration process.
* Developed solutions for integrating Kinesis with other AWS services, such as S3, Redshift, and Lambda, to build end-to-end data pipelines and perform data enrichment.
* Developed Python scripts to migrate data between DynamoDB and other databases or data stores, ensuring data integrity and consistency during the migration process.
* Hands on experience in working with Python libraries including **Pandas and Numpy**.
* Designed and managed API system deployment using fast http server and Amazon AWS architecture.
* Wrote and executed various MYSQL database queries from Python using Python-MySQL connector and MySQL DB package.
* Worked in an agile development environment.

**Environment:** - Python, Spark, AWS Lambda, API Gateway, DynamoDB, SES, GLUE, SQS, EC2, CloudWatch, CloudFront, Cognito, Gitlab, Jira, Jenkins CI/CD, RESTful, XML, MySQL, Agile and Windows.

**Client: Morgan Stanley, NYC Sep 2018 – Sep 2020**

**Role: Software Developer**

**Responsibilities:**

* Involved in the development of the application using Python 3. 3, HTML5, CSS3, AJAX, Json and JQuery.
* Wrote python scripts to parse xml documents and load the data in the database.
* Used Python and Django to interface with the jQueryUI and manage the storage and deletion of content.
* Performed Data analysis, statistical analysis, generated reports, listings, and graphs using SAS Tools–SAS/Base, SAS/Macros and SAS/Graph, SAS/SQL, SAS/Connect, SAS/Access.
* Converted ORACLE data tables into SAS data files using SAS SQL Pass through Facility, and uploaded SAS data files into ORACLE tables using SAS Db load procedure.
* Implemented and managed Apache Kafka clusters to handle high-throughput, real-time event streaming and message queuing for various applications.
* Performed troubleshooting, fixed, and deployed many Python bug fixes of the two main applications that were a main source of data for both customers and internal customer service team.
* Enhanced the organization's ability to effectively manage and analyze its investment portfolios, ultimately contributing to informed decision-making processes.
* Implemented data synchronization mechanisms to keep DynamoDB in sync with external systems and databases.
* Developed front end using Angular.js for internal customer service application.
* Effectively worked with users to define business processes and information systems for supporting those processes.
* Prepared and tested ETL codes as part of SAS projects and managed data integration development tasks in collaboration with other technical teams.
* Implemented authentication and authorization mechanisms in Python applications to ensure secure access to NoSQL data.
* Imported user-written code to generate DI transformations and performed the ETL tuning by using lookup instead of join if possible, removing unnecessary components, making use of the indexes on the tables etc
* Effectively worked with users to define business processes and information systems for supporting those processes.

**Environment:** : Python, HTML5, CSS3, JavaScript, Angular.JS, SAS V9.3,Excel,UNIX,Oracle, SAS/SQL, SAS/ODS, SAS/Graph,SAS/STAT, SAS/Macro, SAS/ACCESS, Oracle, XML, SAS/BASE, SAS/STAT, SAS/EG, Agile and Windows.

**Client: Atria Convergence Technologies Pvt. Ltd, Hyderabad, India June 2016 – Aug 2018**

**Role: Software Developer**

**Responsibilities:**

* Developing Python Framework using Django to perform scan software unit monitoring.
* Built Web application using Python, Django, HTML and template languages.
* Developed entire frontend and backend modules using Python on Django Web Framework.
* Developed and executed various MySQL database queries from python using Python-MySQL connector and MySQL database package.
* Configured AWS Identity and Access Management (IAM) policies for secure access to DynamoDB, including fine-grained permissions and role-based access controls.
* Experienced in writing SQL queries for pulling a large volume of records from facets and claims database using stored procedures, and extraction transformation and loading (ETL) process using SSIS.
* Wrote TSQL procedures to generate DML scripts that modified database objects dynamically based on inputs, scheduling the SSIS packages using SQL server agent services.
* Imported user-written code to generate DI transformations and performed the ETL tuning by using lookup instead of join if possible, removing unnecessary components, making use of the indexes on the tables etc
* Used jQuery and Ajax calls for transmitting JSON data objects between frontend and controllers.
* Used jQuery for selecting particular DOM elements when parsing HTML.
* Developed SQL Queries, Stored Procedures, and Triggers Using Oracle, SQL and PL/SQL.
* Experience in Application Development and Object-Oriented Programming Analysis and design.
* Knowledge in TCP/IP, UDP/IP, Active Directory Infrastructure, DNS, DHCP.
* Attended everyday Enterprise Workflow Stand-Up meeting to provide current status, thus implementing Agile (Scrum) Methodology with Test Driven Development.

**Environment:** Python, Django, MVC, HTML5, CSS3, JavaScript, Angular.JS, OOP, AJAX, jQuery, JSON, PyTables, Oracle, SQL, PL/SQL and Agile and Windows.

**Education – Bachelors Details -** SRM University, Chennai - May 2016

 **Masters Details -** University of Colorado Colorado Springs - May 2021