**Keerthi**

**Senior Python Developer**

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**PROFESSIONAL SUMMARY:**

* Acquired over 10+ years of experience in analysis, design, development, management, and implementation of standalone and client-server architecture enterprise applications.
* Developed proficiency in Python, PHP, MySQL, NoSQL, UNIX, and Linux environments, enhancing system performance and scalability.
* Specialized in designing, coding, debugging operations, reporting, data analysis, and web applications using Python.
* Gained extensive experience with MVW frameworks, including Django, AngularJS, HTML, CSS, XML, JavaScript, jQuery, JSON, and Node.js.
* Led the construction of frameworks and automated complex workflows using Python for test automation, significantly reducing manual testing efforts.
* Authored and maintained RESTful APIs in Python for large-scale applications, optimizing data interchange and system integration.
* Managed projects within LAMP (Linux, Apache, MySQL, Python) and WAMP (Windows, Apache, MySQL, PHP) architectures, delivering robust solutions.
* Developed scalable data processing pipelines using PySpark to process large datasets from structured and semi-structured sources
* Delivered high-quality software deliverables on-time, adeptly using Agile methodologies (SCRUM) with tools like Rally and TFS, and also experienced with RUP and Waterfall methodologies.
* Wrote Python modules to extract and load asset data efficiently from MySQL databases, ensuring data integrity and accessibility.
* Demonstrated command over web services utilizing both SOAP and REST protocols, facilitating seamless external integrations.
* Implemented PyUnit for unit testing all Python applications, ensuring robustness and error-free code.
* Anticipated and mitigated potential failures in databases, communication points, and file systems to maintain high system uptime.
* Evaluated software products against system development and migration requirements to guide the selection process effectively.
* Integrated PySpark pipelines with AWS S3, HDFS, and Delta Lake for reading/writing large volumes of data.
* Proficiently developed websites and web applications using technologies such as PHP, MySQL, AWS, Flask, Jinja, Redis, HTML, XML, JSON, CSS, JavaScript, and AJAX.
* Conducted regression and system-level testing to ensure software quality and functionality prior to release.
* Worked extensively with Python ORM libraries, including Django ORM, to streamline database transactions.
* Provided superior troubleshooting and technical support for migrations, network connectivity, security, and database applications.
* Assessed costs and risks associated with the development of new features and products, optimizing budget allocation and resource management.
* Skilled in using testing tools like Bugzilla and JIRA, enhancing team’s ability to track and fix defects swiftly.
* Contributed significantly to the Python codebase for automated deployment of software across multiple virtual environments.
* Utilized a variety of Python IDEs, including PyCharm, Spyder, NetBeans, PyStudio, PyScripter, Eric, Wing IDE, and PyDev, to enhance coding efficiency.
* Experienced in requirement gathering, use case development, business process flow, and business process modeling, aligning development goals with business objectives.
* Responsible for ensuring rigorous user validations on both client-side and server-side, securing applications against unauthorized access.
* Excelled in automating repetitive tasks through shell scripts and Python, boosting productivity and reducing error rates.
* Analyzed requirements and managed resources efficiently, leading to timely and successful project completions.

**TECHNICAL SKILLS:**

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| **Category** | **Technologies** |
| **Programming Languages** | Python 3.8-3.10, C, SQL, JavaScript, PL/SQL |
| **Web Technologies** | HTML5, CSS3, JavaScript (ES6+), Pydantic, jQuery, AJAX, XML, Angular, React.js |
| **Frameworks** | Databricks, Django, Flask, Fast API, Pyramid, CherryPy |
| **Cloud Technologies** | AWS – S3, Athena, Glue, Sagemaker, Lambda, ECS, Snowflake |
| **ML libraries** | PyTorch, Tensorflow, Scikit-learn |
| **Version Control Systems** | Git, GitHub, GitLab, Bitbucket |
| **Front End** | Angular, React.js, Vue.js, jQuery, Ajax, Bootstrap 5, Tailwind CSS |
| **Analytic Tools** | Python (Pandas, NumPy, SciPy), SAS, Tableau, Power BI, Apache Superset |
| **Application Servers** | Apache Tomcat, Nginx, GUnicorn, uWSGI |
| **Databases** | PostgreSQL, MySQL server, Oracle, MongoDB, Apache Cassandra, DB2, DynamoDB |
| **IDEs/Development Tools** | PyCharm, Visual Studio Code, Jupyter Notebook, Spyder, Jenkins for CI/CD |
| **SDLC** | Agile - Scrum, Waterfall |
| **Platform and Tools** | Elasticsearch, Jenkins, JIRA, Kafka, Devops, Kubernetes |
| **Operating Systems** | Windows 10/11, macOS, Ubuntu 20.04+, CentOS 7/8 |
| **Protocols** | TCP/IP, HTTP/HTTPS, REST, GraphQL, SOAP, SMTP |
| **Testing Tools** | pytest, unittest, Selenium, Postman, JIRA, Playwright |

 **PROFESSIONAL EXPERIENCE:
Client: Signify Health,** **Dallas, TX Sep 2023 to till date**

**Role: Senior Python Developer**

**Project Description:**

Worked on a healthcare data modernization project at Signify Health, focusing on building cloud-native, serverless applications using Python, Django, and AWS. Developed internal testing frameworks, dynamic web interfaces, and automated ETL pipelines. Leveraged AWS services (Lambda, S3, Glue, DynamoDB, Athena) to streamline data processing and infrastructure provisioning. Migrated databases across multiple engines and optimized data models for high performance. Contributed to enhanced automation, reduced infrastructure costs, and improved access to real-time healthcare data.

**Roles & Responsibilities:**

* Designed and developed advanced internal testing frameworks using Python, focusing on enhancing automation and code reliability.
* Created and executed detailed **test plans** covering functional, integration, and regression testing for Python-based applications, ensuring high software reliability and compliance with business requirements.
* Developed **automated test cases**using**Pytest, unittest,** and **Selenium**, integrating them into CI/CD pipelines to streamline validation and reduce manual QA efforts.
* Designed comprehensive **test strategies**aligned with Agile methodologies, including test case design, defect tracking, and requirement traceability using **JIRA**.
* Created sophisticated GUI applications using Python with Django, allowing dynamic display of block documentation and other Python code features via web browsers.
* Authored Python scripts for extracting data from HTML files, improving data extraction efficiency and accuracy.
* Engineered user-friendly website interfaces by developing views and templates with Python and Django’s view controller and templating language.
* Tuned PySpark jobs for performance by adjusting partitioning, caching strategies, and broadcast joins to handle multi-terabyte datasets efficiently.
* Utilized JavaScript and JSON to dynamically update webpage content, enhancing user interaction and data presentation.
* Performed critical troubleshooting, identified root causes, and deployed solutions for major bugs impacting customer data access and internal customer service operations.
* Implemented robust error handling strategies to manage potential failures in databases, communication points, and file systems, ensuring high system availability.
* Hands-on experience with AWS serverless services, including Lambda for event-driven processing, Fargate for containerized workloads, and SQS for asynchronous message queuing.
* Developed serverless applications using AWS Lambda with Python, integrating with DynamoDB for NoSQL data storage and PostgreSQL for relational data management.
* Automated cloud infrastructure provisioning using Terraform, ensuring consistent deployment of AWS resources.
* Worked with Amazon EMR and Databricks to execute PySpark applications in distributed environments.
* Designed and optimized database schemas for PostgreSQL to support complex queries, reducing database response time by 25%.
* Implemented efficient data modeling and indexing strategies in DynamoDB, enhancing application performance for high-throughput operations.
* Constructed SQL queries for various CRUD operations, supporting data management requirements across different projects.
* Scheduled and orchestrated PySpark workflows using Apache Airflow and integrated them into automated data pipelines for daily processing.
* Developed full-stack modules using Python and Django, including API services with the Tasty pie web framework, and managed version control with Git.
* Implemented front-end frameworks like CSS Bootstrap for the development of responsive web applications, improving user experience and interface design.
* Administered MySQL databases, formulated complex queries for data extraction, and managed NoSQL databases for optimized data retrieval.
* Automated cron jobs for data uploads, graph generation, and database backups, enhancing operational efficiency and data visualization.
* Engineered Python merge jobs to facilitate efficient data extraction and loading into MySQL databases, ensuring data consistency and integrity.
* Successfully migrated Django databases from SQLite to MySQL and then to PostgreSQL, maintaining complete data integrity throughout the transition.
* Designed user interfaces using a combination of UI frameworks including HTML, Bootstrap, Node.js, AngularJS, and JavaScript.
* Designed, deployed, and maintained serverless applications using AWS Lambda, enabling automated workflows and reduced infrastructure costs.
* Integrated AWS Glue for ETL processes, automating data extraction, transformation, and loading tasks for seamless data workflows.
* Managed and optimized cloud-based databases using AWS Aurora, ensuring high availability and performance for business-critical applications.
* Utilized AWS Athena for efficient querying of large datasets stored in S3, improving data retrieval time.
* Automated cloud resource provisioning and management using Python scripts with AWS SDK (Boto3), improving deployment speed and reducing manual interventions.
* Developed and deployed serverless applications using AWS Lambda, Python, and AWS API Gateway, reducing infrastructure management overhead by 40%.
* Created AWS Lambda functions in Python for automating cloud infrastructure tasks, such as data processing, file transformations, and real-time event handling.
* Built and maintained ETL pipelines with Python and AWS services (S3, Lambda, DynamoDB, Redshift) to process and load large datasets with minimal latency.

**Environment:** Python 3.10, Databricks, Django 1.4, HTML5, CSS, XML, MySQL, JavaScript, Angular JS, jQuery, CSS Bootstrap, JavaScript, Eclipse, Git, GitHub, AWS, Linux, Shell Scripting.

**Client: Citizens Bank,** **Herndon, VA Oct 2021 to Aug 2023**

**Role: Python Developer**

**Project Description:**

Contributed to enterprise web application development and data-driven solutions at Citizens Bank using Python, Django, Flask, and FastAPI. Built scalable microservices with Docker and Kubernetes, integrated RESTful and GraphQL APIs, and deployed ML models with TensorFlow and PyTorch. Managed asynchronous tasks with Celery/RabbitMQ and orchestrated ETL workflows using Apache Airflow. Automated CI/CD pipelines using Jenkins, GitHub Actions, and AWS Code Pipeline, cutting release time by 30%. Delivered real-time data processing with Kafka/Redis and developed interactive dashboards with Tableau and Power BI to support key business decisions.

**Roles & Responsibilities:**

* Developed complex web applications using Django and Flask frameworks to enhance user experience and functionality.
* Led the integration of RESTful and GraphQL APIs to improve data retrieval processes and system integration.
* Utilized advanced Python libraries like Asyncio and Pandas for efficient data manipulation and asynchronous programming techniques.
* Built modular, reusable PySpark components and integrated them into enterprise ETL frameworks.
* Implemented microservices architecture using Docker containers and Kubernetes for deployment and scaling of applications.
* Engineered robust machine learning models using TensorFlow and PyTorch, deploying them into production environments.
* Built and deployed machine learning models using **Scikit-learn,** including classification, regression, and clustering algorithms for real-world business applications.
* Developed end-to-end ML workflows with **Python and Scikit-learn**, including data preprocessing, model training, evaluation, and performance tuning.
* Managed state-of-the-art database solutions with PostgreSQL and MongoDB, ensuring high availability and performance.
* Used Delta Lake with PySpark to build reliable data lakes supporting ACID transactions and time travel features.
* Designed and maintained APIs with FastAPI and Swagger for better scalability and documentation.
* Conducted extensive code reviews and maintained high standards of code quality using SonarQube and Black.
* Wrote unit and integration tests for PySpark jobs using pytest and unittest, and ensured code quality with pylint and black
* Automated deployment pipelines using Jenkins and GitHub Actions to streamline development processes.
* Employed Celery with RabbitMQ for task queuing and asynchronous task execution to enhance performance.
* Orchestrated data workflows with Apache Airflow, managing ETL processes efficiently across distributed systems.
* Built real-time data processing applications using Structured Streaming in PySpark, handling data from Kafka and writing to sinks like S3 and PostgreSQL.
* Managed and maintained cloud-based infrastructure with AWS CloudFormation, ensuring seamless deployment and scalability of resources.
* Automated deployment pipelines using AWS Code Pipeline, Code Deploy, and Jenkins, leading to a 30% reduction in release time.
* Deployed containerized applications using Amazon ECS, EKS, and Docker, ensuring high availability and scalability.
* Enhanced security protocols using OAuth, JWT, and HTTPS to safeguard applications against threats.
* Integrated real-time data processing capabilities using Apache Kafka and Redis for messaging and caching.
* Conducted performance tuning and optimization of applications and databases using profiling tools like Py-Spy and SQL EXPLAIN.
* Developed and supported the continuous integration and deployment (CI/CD) systems, enhancing the development lifecycle.
* Configured and maintained CI/CD pipelines using Git and Jenkins, automating code builds, tests, and deployment processes for seamless releases.
* Integrated automated testing frameworks within CI/CD pipelines, improving deployment reliability and reducing manual intervention.
* Developed interactive dashboards and visualizations using Tableau, Dash, and PowerBI to deliver actionable insights to stakeholders.
* Created custom reports and data visualizations to track business KPIs and support decision-making.
* Worked with business stakeholders to define reporting requirements and deliver solutions that aligned with organizational goals.
* Led testing efforts using PyTest to ensure the quality and stability of Python-based applications.
* Developed automated unit and integration tests for data processing pipelines, ensuring error-free and efficient execution in production environments.
* Implemented continuous integration (CI) testing to detect issues early and improve software release cycles.
* Provided mentorship and guidance to junior developers, fostering a collaborative and inclusive team environment.
* Monitored, debugged, and optimized web applications using tools like New Relic and Splunk to ensure high performance and reliability.

 **Environment:** Python 2.7,3.3, Pytorch, Django 1.4, HTML, CSS, AJAX, Tomcat, Apache HTTP, Angular.js, JSON, Restful, Celery, RabbitMQ, XML, JavaScript, OOD, Shell Scripting, GIT Hub, MYSQL, Cassandra, JIRA.

**Client: Liberty Mutual, Boston, MA. Aug 2020 to Sep 2021**

**Role: Python Developer**

Developed scalable backend systems and APIs at Liberty Mutual using Django, Flask, and GraphQL (Graphene). Integrated ML models (TensorFlow, PyTorch) into production, built microservices with Docker/Kubernetes, and implemented async processing with asyncio, RabbitMQ, and Kafka. Managed SQL/NoSQL databases (PostgreSQL, MongoDB, Cassandra) and automated deployments via CI/CD pipelines using Jenkins, GitHub Actions, and GitLab CI. Enhanced system monitoring with Sentry and Datadog and delivered interactive dashboards using Matplotlib and Seaborn to support data-driven decisions.

 **Roles & Responsibilities:**

* Designed and implemented advanced software solutions using Python frameworks such as Django and Flask, focusing on scalability and maintainability.
* Spearheaded the development of RESTful APIs with Django REST Framework to enhance application interoperability and data exchange.
* Utilized Python’s asynchronous libraries like asyncio and aiohttp to improve system performance and responsiveness in high-load environments.
* Led the integration of machine learning models into existing systems, using libraries such as TensorFlow and PyTorch, to automate data analysis and decision-making processes.
* Engineered microservices architectures using Docker and Kubernetes, ensuring efficient deployment and scaling of applications across multiple environments.
* Administered and optimized NoSQL databases like MongoDB and Apache Cassandra, enhancing data storage and retrieval processes for large-scale applications.
* Implemented CI/CD pipelines using Jenkins, GitHub Actions, and GitLab CI to automate testing and deployment phases, significantly reducing go-to-market time.
* Developed complex SQL and NoSQL queries and managed database transactions to ensure data integrity and performance using PostgreSQL and MongoDB.
* Authored and maintained comprehensive documentation using tools like Sphinx and MkDocs to improve code understandability and onboarding processes.
* Conducted code reviews and mentored junior developers, fostering best coding practices and enhancing team knowledge and skills.
* Collaborated with cross-functional teams to understand business requirements and translate them into technical specifications and scalable solutions.
* Enhanced system security by integrating OAuth, JWT, and other security protocols to safeguard sensitive data and comply with industry standards.
* Automated repetitive tasks and processes using custom Python scripts, increasing productivity and reducing error rates.
* Utilized advanced data visualization libraries such as Matplotlib and Seaborn to create interactive dashboards and reports for stakeholder reviews.
* Managed source control with Git, ensuring efficient team collaboration and version control in distributed development environments.
* Executed and monitored performance tuning and stress testing of applications using tools like PyTest and Locust, ensuring robustness and scalability.
* Developed GraphQL APIs using Graphene-Python to provide more flexible and efficient data access and manipulation.
* Implemented event-driven programming and message queuing services using RabbitMQ and Apache Kafka to handle asynchronous data flows and real-time data processing.
* Engaged in proactive troubleshooting and debugging of production issues, leveraging logging and monitoring tools such as Sentry and Datadog.
* Played a key role in strategic planning and implementation of new technologies and frameworks to keep the technology stack up-to-date and competitive.

**Environment:** Python, Django, Pytorch, Tensorflow, MySQL, NOSQL, GIT, SVN, Unit Test Linux, Windows.

**Client: GS LAB, Delhi, India Mar 2017 to Oct 2019**

**Role: Python Engineer**

**Project Description:**

Developed a full-stack web application for data management using Python (Django), MySQL, and jQuery. Designed backend logic, created dynamic UI components, and implemented client-side validation. Built XML parsers, automated testing with Selenium, and generated visual reports using NumPy and Matplotlib. Managed deployments in a Linux/Apache environment and collaborated via SVN for version control.

**Roles& Responsibilities:**

* Designed and developed data management system using MySQL.
* Worked on high level design and detail design.
* Design, develop, test, deploy and maintain the website.
* Developed the interactive user interface using jQuery JavaScript library.
* Developed/Modied GUI using HTML, CSS and JavaScript (jQuery).
* Built application logic using Python 2.7, Django and MYSQL.
* Rewrite existing Python/Django modules to deliver certain format of data.
* Used Django Database API's to access database objects.
* Developed python scripts to parse XML documents and load the data in database.
* Worked on all the client-side validation using JavaScript.
* Wrote Constraints, Indexes, Views, Stored Procedures, Cursors, Triggers and User Dened function.
* Extensively used Selenium Library to write fully functioning test automation process that allowed the simulation of submitting dierent requests from multiple browsers to web applications.
* Worked with jQuery for all client-side JavaScript manipulation.
* Developed unit test/regression test framework for working/new code.
* Used Subversion control tool to coordinate team-development.
* Worked with Forms, views, models using Django.
* Developed entire frontend and backend modules using Python on Django Web Framework.
* Debugging and troubleshooting the web application.
* Developed views and templates with Python and Django's view controller and templating language to create a user-friendly website interface.
* Generated complex graphical data, creation of histograms etc. using the Python's modules NumPy, matplotlib etc.

**Environment:** Python, Django 1.3, MySQL, Linux, HTML, XHTML, SVN, CSS, AJAX, Bugzilla, JavaScript, Apache Web Server.

**Client: Xebia IT Architects India Pvt Ltd, Mumbai, India Aug 2015 to Feb 2017**

**Role: Software Engineer**

**Project Description:**

Built and maintained a data-driven web application using Python (Django), MySQL, and RESTful APIs. Developed rich

UI components with JavaScript, jQuery, and Highcharts. Implemented XML data processing, backend logic, and

Django ORM for database interaction. Supported deployments on Linux with Apache Tomcat and participated in

Agile/SCRUM development and UAT testing.

 **Roles & Responsibilities:**

* Used Agile Methodology and SCRUM Process.
* Worked with the Stakeholders, gathered requirements, developed High level design and Detail design documents.
* Developed UI using HTML, AJAX, JavaScript and jQuery and jQueryUI.
* Re-engineered various modules for implementing changes and creating ecient system.
* Developed rich UI web application using JavaScript libraries like jQueryUI, datagrid, jscolor, and highcharts.
* Designed and developed components using Python with Django framework. Implemented code in python to retrieve and manipulate data.
* Implemented database access using Django ORM.
* Used MySQL as backend database and MySQLdb of python as database connector to interact with MySQL server.
* Used Restful APIs to access data from suppliers.
* Used Python and Django creating graphics, XML processing of documents, data exchange and business logic implementation between servers.
* Associated with Restful API's to gather network trac data from Servers.
* Supported Apache Tomcat web server on Linux Platform.
* Support the scripts conguration, testing, execution, deployment and run monitoring and metering.
* Developed and executed User Acceptance Testing portion of test plan.

**Environment:** Python, Django, C++, HTML/XHTML, XML, MySQL, Shell Scripting, PL/SQL, Unix, Linux, Windows.

**Education:**

* Bachelor of Technology (B. Tech) in Information Technology from JNTUH, Hyderabad, Telangana, India. - 2015