**Samuel G. Prabhakar**

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**Summary**

* 7 years of expertise in developing scalable and high-performance applications in Python, with a deep understanding of Object-Oriented Programming (OOP) principles.
* 5 years of experience in working with Java, PHP, and JavaScript for web development and backend services.
* Experienced in using Matlab and MathCAD.
* Proficient in writing SQL Queries, Views, Joins, Constraints, DQL, DDL, DML, TCL and user-defined functions to implement business logic.
* Monitored performance and optimized SQL Queries for maximum efficiency.
* Expertise in web automation scripts using Python Selenium library and integrating them with ChromeDriver.
* Involved in development, testing, and maintenance, as well as problem resolution during implementation.
* Coordinated with technology teams to identify business processes and system requirements.
* Experienced with version control systems such as GitHub.
* Familiar with CI/CD tools such as CircleCI for unit testing and continuous integration.
* Strong experience in ETL processes, data extraction, transformation, and loading, leveraging Python and SQL for data-driven applications.
* Business content activation experience and metadata repository usage.
* Experienced in creating web reports.
* Strong understanding of Agile and Waterfall models, with hands-on involvement in the SDLC from design to deployment.
* Experienced in deploying web applications using AWS, Heroku, and Render.
* Proficient in using enterprise service applications.
* Experienced in using BI tools such as TeamDynamix.

**Education:**

* Bachelor of Science in Software Engineering

**Technical Skills:**

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| **Python Libraries:** | Django, Flask, NetworkX, Jython, Pytest, Selenium, Requests, TensorFlow, SciPy, NumPy, Pandas, Matplotlib, PyTorch, Scikit-Learn, PyTorch Geometric, Pillow, Beautiful Soup, Webull, CSV, Pybluez, Keyboard, Mouse |
| **Python Web Framework** | Django, Flask |
| **Databases:** | Oracle SQL, PL/SQL, PostgreSQL, SQLite3 |
| **Web Technologies:** | HTML5, CSS3, AJAX, XML, JSON, jQuery, PHP |
| **CI Tools:** | CircleCI, GitLab CI/CD |
| **Package Management Tools:** | pip, conda, pipenv, Anaconda, PDM |
| **Version Control:** | Git, GitKraken |
| **Documentation Tools:** | Overleaf, LaTeX, MS Word, MS PowerPoint, MS Excel, LibreOffice |
| **Methodologies:** | Agile, Scrum, Waterfall, IDP (Iterative Development Process) |
| **Deployment Tools:** | Heroku, AWS, Render, Wix |
| **Operating Systems:** | Windows, Kali Linux, Ubuntu, macOS |
| **Scripting Languages:** | Zsh, Bash, Batch |
| **File Types:** | CSV, BIN, XLSX, DAT, ISO, DB, EXE, SH |
| **IDEs:** | isual Studio Code, PyCharm, Visual Studio, Android Studio, Eclipse, Atom, Jupyter Notebook, Google Colab |
| **Java:** | Spring Boot, JUnit, JavaFX, Jython |
| **C++:** | Qt, Eigen, OpenCV, Boost C++ Libraries |
| **Matlab:** | Modbus Explorer, Signal Analyzer, Instrument Control |

**Professional Experience:**

**Client: Bank of The West, Phoenix, AZ July 2022 – Present**

**Role: Full stack Python Developer**

**Description:** This application delivers comprehensive payment services for commercial and corporate banking customers. As the core platform, it encompasses all payment services, specialized services, and billing features. Customers can process their services through various channels, including host-to-host, mobile, web services, and e-Banking.

**Responsibilities:**

* Collaborated in requirements gathering, resolving blockers, and coordinating business meetings.
* Worked with a team of developers on Python applications for risk management.
* Utilized Python OOD to ensure reusability, reliability, extensibility, and quality coding.
* Implemented an automated billing solution for all commercial customers using Django, Celery, and PostgreSQL.
* Developed RESTful APIs using Django REST Framework, with Postman and Pytest for API testing.
* Utilized PDF template libraries such as ReportLab for generating customer payment information.
* Designed and developed applications using Agile methodology, following TDD and Scrum practices.
* Experienced in working with ORM frameworks like Django ORM.
* Developed and deployed machine learning models using Python, Scikit-learn, and TensorFlow for detecting fraudulent transactions within the automated billing solution. Leveraged Logistic Regression, Random Forest, and Gradient Boosting algorithms to classify suspicious activities based on customer payment behaviors and transaction patterns.
* Engineered and implemented scalable data processing pipelines, leveraging Pandas and NumPy for efficient data manipulation, optimizing workflows for large datasets, and resulting in substantial time and resource savings.
* Involved in the design and development of RTP payments for commercial customers and successful integration with external vendors.
* Developed parsers to convert customer files into Python objects using libraries such as lxml, Beautiful Soup, and pandas.
* Developed an email service application using Django, Celery, PostgreSQL, Swagger, and Python, widely used in the project to send emails to customers.
* Identified and implemented various design patterns, including Singleton, Factory, and DAO, using Python.
* Designed and developed relational database schemas for easy and fast retrieval of data from PostgreSQL.
* Experienced in writing complex SQL queries using joins, stored procedures, functions, triggers, cursors, and indexes in the data access layer.
* Experienced in using enterprise integration frameworks such as Apache Airflow, developing workflows to move files from SFTP servers and message queues to application servers.
* Assisted in migrating production infrastructure to Amazon Web Services (AWS) utilizing CloudFormation, Chef, Jenkins, and Docker.
* Contributed to the automation of AWS services, including web servers, ELB, CloudFront distribution, database instances, EC2 security groups, S3 buckets, and application configurations.
* Used Angular to deliver high-performance user experiences, offline accessibility, and zero-step installation.
* Built reusable service components using Angular, object-oriented JavaScript, jQuery, HTML, and CSS3 following design specifications.
* Worked closely with the back-end team to implement AJAX calls to REST APIs and update the dynamic functionality of HTML in Angular.
* Involved in web designing using HTML5, XHTML, CSS3, jQuery, and JavaScript, extensively using table-less design in CSS for positioning.
* Created page views, templates, and CSS layouts within the Django Python Framework for efficient inventory status views.
* Experienced in writing unit test cases using Pytest, unittest, and mock libraries.
* Utilized Git for version control.
* Extensively used Python features such as decorators, generators, and context managers in the development of services.
* Developed shell scripts in Linux and Python for automating regular tasks.
* Conducted weekly progress meetings with the client, following an Agile approach with SCRUM processes, to discuss trial results, adapt strategies, and ensure alignment with project goals.
* Developed applications using build tools like Pipenv and Poetry and used logging frameworks such as Python's built-in logging and Loguru.

**Environment: AWS, EC2, Python, Django, Beautiful Soup, NumPy, SciPy, Pandas, unit test, Git, PyCharm, PostgreSQL, OOD, UML Class Diagram, ERD, Process Flow Chart, Sprint Review, Agile, SCRUM, Over-Leaf, Python Unit Test, HTML5, CSS3, jQuery, JavaScript**

**Client: Takeda Pharmaceuticals, Chicago, IL July 2020-June 2022**

**Role: Python Developer**

Description : Cerner-MMD HIE is a health information exchange application providing physicians with near real-time, secure, clinical and administrative information regardless of location, affiliation, EMR technology, or vendor

**Responsibilities:**

* Extensively worked on the development and configuration of new HIE applications and data transactions using Python, Django, and Apache Tomcat, with dependency management handled by pip and virtual environments.
* Developed use case diagrams, class diagrams, database schemas, and provided mapping between relational database tables and object-oriented Python objects using Django ORM. Supported CRUD operations.
* Developed, supported, and enhanced RESTful web service calls from third-party APIs to the HIE server using Django REST Framework.
* Created Angular services to invoke RESTful APIs (HTTP GET, PUT, POST, DELETE) operations. Used AngularJS to call REST CRUD APIs (Django REST Framework).
* Supported RDBMS transactions using SQLAlchemy. Designed and developed re-engineering from raw SQL/RDBMS to Django ORM data access layer conversion.
* Developed Python classes and Data Access Objects (DAO) that handled all database operations using Django ORM.
* Designed and implemented database schemas using SQLAlchemy for relational databases, supporting new functionalities in the HIE application.
* Migrated legacy SQL and data access logic to SQLAlchemy, aligning with Django ORM where necessary for hybrid system compatibility.
* Designed and developed internal utilities like "Regression Utility" and "Monitor Log" using Django, HTML, JavaScript, Django templates, logging, SQL, and SQLite/PostgreSQL.
* Implemented code and performed code reviews for other developers to ensure code quality and adherence to best practices.
* Involved in developing a unit test framework using Pytest.
* Participated in unit testing and user acceptance testing.
* Prepared the user manual and explained it to the end user of the report.
* Attended daily scrum calls to discuss the Jira stories and tasks.
* Developed views and templates with Python and Django's view controller and templating language to create a user-friendly website interface.
* Developed a Python script utilizing the Selenium library for web automation.
* Integrated ChromeDriver for browser automation, ensuring seamless interaction with web pages.
* Extracted data from PostgreSQL, Cassandra, Redis, InfluxDB, and Elasticsearch.
* Used Python libraries and SQL queries/subqueries to create several datasets, producing statistics, tables, figures, charts, and graphs.
* Involved in a hybrid architecture where new functionalities were developed in Python while ensuring seamless integration with legacy Java components.
* Contributed to CI/CD practices with GitHub.

**Environment: Python, Java, selenium, Django, PostgreSQL, batch script, SQL, csv, chrome driver, Atom, Github.**

**Client: Black Hawk Network May 2017 – June 2020**

**Role: Python Developer**

**Responsibilities:**

* Implemented eGift security enhancements to encrypt the eGift ID using Python's cryptography library.
* Implemented Apple Pay and Samsung Pay features in the eGift Activation application using relevant Python SDKs and APIs.
* Managed changes to the Samsung and PayPal adapters, ensuring smooth integration with the eGift processing API.
* Participated in daily scrum meetings, contributing to Agile development practices.
* Conducted code reviews to ensure code quality and adherence to best practices.
* Responsible for User Story demos at the end of each sprint, showcasing completed features to stakeholders.
* Blackhawk Network Holdings, Inc. is a leading prepaid and payments network that supports program management and the physical and digital distribution of a wide range of prepaid products.
* The eGift team manages eGifts purchased through GiftCardMall.com.
* Developed and maintained the eGift processing API, the backbone of eGifts, responsible for processing eGifts using Django REST Framework.
* The eGift Activation application allows customers to view their eGift cards with barcodes redeemable at stores, developed using Django.
* The eGift Activation application also supports Apple Pay, Android Pay, and Samsung Pay features, implemented using Django and relevant SDKs.
* Involved in requirements gathering and User Story discussion
* Responsible for Fraud Check Feature implementation (Trustev) in the eGift Activation application using Django and DRF.
* Designed the application using **Agile** Methodology and **Scrum.**
* Contributed to the creation of essential documents supporting different phases of **SDLC** including requirements and analysis reports, design documents, and technical documentation.
* Introduced a registration page in the eGift Activation application to gather recipient details using **Django** forms and views.
* Built the front-end using **HTML 5, JavaScript,** and **CSS**.
* Integrated PHP-based components with Django for processing user transactions by ensuring smooth interaction between legacy **PHP** systems and the new Django application.
* Developed a **Java-based adapter** to enable seamless integration with third-party payment gateways, facilitating efficient communication between Java-based APIs and the Django backend system. This ensured compatibility and improved transaction processing performance.
* Created Business Logic using **Python** to create Planning and Tracking functions.
* Created event driven actions that were handled by **JavaScript**.
* Used **Diagrams.net** to draw **Class** **UML** diagrams, **database schema,** and **used case UML** diagrams.
* Optimized database-related logic using **SQLAlchemy sessions**, reducing query redundancy and ensuring efficient resource management.
* Wrote **SQL Queries**, Store Procedures and store customer transactions, Triggers and functions**.**
* Built database Model, Views and API's using **Python** for interactive web-based solutions.
* Implemented features for the **Continuous Integration/Continuous Deployment (CI/CD)** pipeline, including automated testing frameworks.
* Used **GIT** control tool to assist in coordinating team-development.
* Developed and executed User Acceptance Testing portion of test plan.
* **Circle CI** was used to do unit testing and continuous integration.
* Created **UNIX batch scripts** for **data loading** and **data file extraction**.

**Environment: Python, Django, PHP, SQL, PostgreSQL, Java, HTML5, CSS, JavaScript, PyCharm, Git, Diagram.net, UML, Agile, Scrum, SDLC.**

**Cardboard Stringer Strength Analysis with Sand Loading and MATLAB Modeling Conducted** January 2018 – March 2018

Stringer strength testing using cardboard and MATLAB, employing a unique approach of incrementally adding sand until failure. Applied advanced engineering principles to analyze structural integrity and determine optimal strength parameters, showcasing proficiency in MATLAB for data analysis and modeling.

**Environment: MATLAB R2019B, MATLAB.**