

## Summary

Software Engineer with experience developing **Java, Python, Android, and JavaScript** applications. Can develop, integrate, and deploy **AWS services**. Can train and deploy **Machine Learning models in Python**.

## Skills

### Languages

**Fluent:** Python, Java, C++, HTML & CSS, SQL

**Intermediate:** JavaScript

**Learning:** Kotlin, PowerShell & Bash scripting for CI/CD, PHP

### Frameworks, API, and Cloud services

**Fluent:** AWS Amplify, Android SDK, Google APIs

**Intermediate:**

**AWS services:** EC2, S3, Simple DB, DynamoDB

**Python:** Flask, Django

**JavaScript:** Node.js

**Databases:** MariaDB, MongoDB, PostgreSQL

**Learning:**

**Machine Learning:** Model development with **scikit-learn, TensorFlow, Keras**. Data representation with **matplotlib**.

**AWS:** Model Training on Cloud Instances with AWS infrastructure, GAN training with **AWS DeepComposer**

## Experience

## Open Source Contributions

### [scikit-image: Image processing in Python](#)

- Illustrated usage for natural sort algorithm by processing documentation in PR, which was successfully merged into master branch.

## Free Lancing

Client: Cr\*\*\*\*\*U (Startup): Fintech Android App [Name withheld for client confidentiality]

- Accomplished feature engineering by communicating with client to develop overall project requirements.
- Designed technical project architecture from client documents to create future roadmaps for development.
- Designed and redesigned UI mockups by using client input which led to painless delivery.
- Created app screens and developed Java backend code to deliver app functionality for serverless authentication and data storage.
- Developed and deployed Amazon Web Services as a serverless backend functionality which reduced cost of development to far below client expectations.
- Created a class to interface AWS functionality with the app while maintaining abstraction between app layers. This led to much easier debugging and reduced development time.
- Managed client communications to aid them in developing suitable business processes.

**Technologies used:** Java, Android SDK and Google APIs, AWS Amplify, AWS SimpleDB, AWS S3

## Key Projects

### Diabetes Prediction

Android app with a Flask backend that performs diabetes prediction with an ensemble of 6 trained machine learning models.

- Designed application architecture from specification documents, which was used to develop detailed Agile based plan for project development.
- Led a team of 4 developers to create UIs and Kotlin backend code, and delivered functionality on a tight deadline.
- Developed and deployed a Flask application to act as an API and serve as the backend for the Android app.
- Developed pipelined architecture for training and serializing 6 models on the Pima Indians diabetes data set, which were then encapsulated into an ensemble and deployed using a Flask based API

**Technologies used:** Kotlin, Python, Flask, scikit-learn, Android SDK, Pytest

### Random Question Paper Generator

Web and Android app with a custom python backend that generates custom Question sets from a very large question bank database.

- Supervised a team of 8 developers to design and develop a web application component, and kept development on track when half the team dropped out.
- Created a python application that connects to a MariaDB instance with 1000s of questions and generates a well-balanced question paper in 3 seconds.
- Optimized the python application and the database instance that reduced processing time by 12 seconds from 15 to 3 seconds, a reduction of 500%.
- Ported the web app to an Android app using WebView, which now eased app use on mobile devices.

**Technologies used:** Python, PHP, HTML, CSS, SQL, MariaDB, Android SDK, Pytest

### Project-Setup

Python application that sets up a custom development environment in seconds.

- Created functionality to store any commands in YAML files, which created a layer of abstraction that allows for language agnostic setup.
- Wrote tests for the entire package leading to more than 95% code coverage.
- Developed and documented set of commands for setting up python projects along with CI pipeline, which leads to consistent local workflow across all projects of the organization.

**Technologies used:** Python, YAML, Pytest

### Machine Learning Projects

- Developed models for the following datasets: Pima Indians Diabetes dataset, Boston Housing dataset, Iris flowers dataset.
- Analyzed the StackOverflow 2019 developer survey.

### Echo Music Player

- Developed music player Android application using Kotlin.

**Technologies used:** Kotlin

### Wget Downloader

**Python** utility that downloads and archives webpages using the wget tool. Designed application architecture to generate layers of abstraction so that only a file with links is required for input, simplifying archival operations.

## Education

**Bachelor of Technology in Computer Science and Engineering**, CGPA:9.1/10, 2016-2020, from JIS University, Kolkata.

**Certifications** in Data Structures, Social Networks, Machine Learning, DBMS, AWS DeepComposer & Android development from NPTEL, Udacity & InternShala.