

## 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, Lambda, API Gateway

**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**

**Azure services:** Azure AppService, Azure Virtual Machine

## 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 Work Experience

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

- Designed and developed **Java Android app** with respect to client business requirements.
- Developed **authentication, data storage**, and certain business **functionality using API calls** for said app.
- Developed and deployed serverless Amazon Web Services backend with **Amplify, DynamoDB, API Gateway, S3, and Lambda**.

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

## Key Projects—See Portfolio at [portfolio.debabrata.xyz](https://portfolio.debabrata.xyz)

### Full Stack Projects ↓

#### Diabetes Prediction Android App

- Full Stack **Android app** with a **Flask backend** that performs diabetes prediction with an **ensemble of 6 trained machine learning models**.
- Led a team of 4 developers to create user interfaces and **Kotlin** code, and delivered functionality on a tight deadline.
- 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 a Flask application** to act as an API and serve as the backend for the Android app.

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

#### Random Question Paper Generator

- Web** and **Android app** with a custom **python backend service** that generates custom Question sets from a very large question bank database.
- Led a team of 8 developers to design and develop a **PHP** web application component and a **Kotlin Android** component.
- Developed a **Python** application queries 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%.

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

### Python & Machine Learning projects ↓

#### Nasa-Get

- Django app** that displays data collected from querying **NASA APIs**. View here: [d5625.pythonanywhere.com/home/](https://d5625.pythonanywhere.com/home/).
- Simple design for a clean UX. Smart, auto-expiring authentication for security. Supports up to 4 APIs. Deployed on *PythonAnywhere*.

**Technologies used:** Python, Django, NASA APIs, Ridge CSS, HTML

#### OpenCV-Masker

- Computer Vision Django app** that utilizes the OpenCV-Masker algorithm to mask colors in a video. View [here](#). Deployed on *PythonAnywhere*.
- Allows user to remove a color in a video and replace it with the background. Replicates the invisible cloak effect in Harry Potter movies.

**Technologies used:** Python, Django, OpenCV, Ridge CSS, HTML

#### Wget Downloader

Developed a **Python** utility that downloads and archives webpages using the wget tool. Only a file with links is required for input, simplifying archival operations.

#### Project-Setup

Developed a **Python** utility that sets up a custom development environment in seconds. Tested with 95% test coverage using **pytest**.

#### Machine Learning Projects

- Developed **machine learning models** for the following datasets: **Pima Indians Diabetes** dataset, **Boston Housing** dataset, **Iris flowers** dataset.
- Analyzed the **Stack Overflow 2019 developer survey**.

## Education

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

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