DEBABRATA BHATTACHARYA[d.bhatta.1232@gmail.com](mailto:d.bhatta.1232@gmail.com) | [github.com/D-Bhatta](https://github.com/D-Bhatta) | [Portfolio](http://portfolio.debabrata.xyz/)

# 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](https://github.com/scikit-image/scikit-image/pull/4599)

* 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](http://portfolio.debabrata.xyz/)

### 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**

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

### Echo Music Player

* Developed music player Android application using Kotlin.

**Technologies used: Kotlin**

## 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](https://dymmy1forgames.pythonanywhere.com/masker/home/). 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. Designed application architecture to generate layers of abstraction so that 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 Data Structures, Social Networks, Machine Learning, DBMS, AWS DeepComposer & Android development from NPTEL, Udacity & InternShala.