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**.

# Work Experience

I have 6 months of work experience. Know more at [portfolio.debabrata.xyz/projects/work-history.html.](https://portfolio.debabrata.xyz/projects/work-history.html)

### Client: New-to-market, data driven Fintech Startup [Name withheld for client confidentiality]

* Designed and developed a consumer facing **Java Android app** with respect to client business requirements.
* Built **authentication**, **data storage**, and certain business **functionality using API calls** for said app backend, within 10% of client budget.
* 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**

**Time:** 4 Weeks (December 2020 - January 2021)

### Client: Mid-sized steel and other metals manufacturing concern [Name withheld for client confidentiality]

* Maintained **Django and Flask API**s by debugging and refactoring code, writing tests, and creating and rewriting documentation.
* Developed 3 internal Django apps, that accelerated internal processes and related business functionality.
* Rehired for second contract as a **Support Engineer** due to impressive performance and reducing development time by 25%.
* Maintained **AWS Lambda functions** composed of **Python** using **Boto3** library by debugging, documenting, and writing tests.
* Increased unit test coverage of Python code using **Pytest** from **50% to 95%.**

**Technologies used: Python, Django, Flask, Boto3, AWS Lambda, AWS S3, Pytest, Java, CSS, HTML**

**Time:** 3 months (September 2020 - December 2020)

# 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,** Simple DB, DynamoDB, API Gateway

**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.

# Projects: See Portfolio at [portfolio.debabrata.xyz](http://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, Kotlin, 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 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**

##### Python Utilities

* **Wget-Downloader**: **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**: **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.