DEBABRATA BHATTACHARYA

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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

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.
- Created a **Python** application service 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%.

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/.
- 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. 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.