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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 services: Amplify, Android SDK, Google APIs

Intermediate:

AWS services: EC2, S3, Simple DB

Python: Flask, Django

JavaScript: Node.js

Databases: MariaDB, MongoDB

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.