Subhamay Bose

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Career Objective

Through hard work and perseverance, I have successfully expedited multiple projects to fruition in my current company. Working as a Senior System Engineer I have attained each nitty-gritty attribute in the project with the best possible, optimized solution requested by the respective clients. As I am fascinated by the mystical realm of AI, I want to work as an AI and Automation Architect in the not-so-long future.

Work Experience

IBM India Pvt. Ltd.:

- Working as a Senior System Engineer since February 2022.

DTech System:

- Working as an Application Developer AI since January 2020.
- Working as a Web Developer since November 2016.

Projects

- **Digital Operations: Streamlining Hybrid Cloud Management with SAP Integration**
  - **Scope**: IBM's Digital Operations empowers organizations with comprehensive observation, orchestration, and automation capabilities to proactively manage complex hybrid cloud IT environments. Harnessing AIOps-powered automation provides a unified view of both IT operations and business processes, enabling seamless monitoring and control. With end-to-end enterprise application management and automation of command center and service desk operations, IBM's Digital Operations revolutionizes operational efficiency.

    Notably, IBM's Digital Operations has achieved a significant milestone by obtaining SAP Certified Integration with SAP Netweaver. This certification validates the technical compliance of IBM's solution with SAP's certification procedures and functionalities. Key features include real-time alert data ingestion from SAP, leveraging SAP topology information for assessing alert impact, and SAP alert auto-validation and auto-remediation.
  - **Technology Stack:** Node.JS with Loopback, React, Python, Watson Services, Kubernetes, Kafka, Elastic, Drool, PostgreSQL.
  - **Roles and Responsibilities**:
    - Developing and maintaining scalable microservices using Node.js & Python to support the Digital Operations platform.
    - Containerizing microservices and deploying them using Kubernetes for efficient orchestration and scalability.
    - Integrating the API of a third-party IT Service Management (ITSM) tool to enable seamless communication and data exchange between the Digital Operations platform and the ITSM system for incident management and workflow automation.
    - Collaborating with the architects to design and implement microservice architecture best practices and integration patterns.

- **Heart disease prediction using Machine Learning**
  - **Scope**: The prime directive of the project is to predict heart disease, weighing in attributes such as blood pressure, cholesterol levels, and heart rate. Primarily the dataset has been collected from the UCI Machine Learning Repository. Afterward, the current time data is collected with the help of some reliable resources. We applied ML algorithms like Random Forest, XGBoost, and SVM, among which Random Forest Classifier gave the best accuracy. To collect the data from devices, the Node.js module Express.js is used for API development.
  - **Roles and Responsibilities**: Requirement gathering, API development for data collection, exploratory data analysis, data cleaning, and trying out different models to achieve the goals.

- **Face mask detection using AI**
  - **Scope**: Due to the current pandemic situation, face-mask detection systems are in peak demand, mostly to ensure safety in the transportation industry, densely populated areas, residential districts, large-scale manufacturers, and other enterprises.
  Since a computationally efficient model system is required that is why MobileNetV2 architecture is used to build this model and can be deployed using simple embedded systems.
  - **Roles and Responsibilities:** Working on finding out the appropriate architecture that will work on computationally efficient embedded systems and building the model with high accuracy.

- **Product backorder prediction using Machine Learning**
  - **Scope**: The main aim of analyzing the backorder data is to find out the reason why a particular product is not in stock when a potential customer wishes to buy it. Thus the companies are looking to explore the cause of backorder and the solution that might be used to minimize the backorder and increase the business. Since a computationally efficient model system is required that is why Random Forest Classifier is used to build this AI model.
  - **Roles and Responsibilities:** Working on data cleaning, unifying the data scale, and performing EDA on it as well as building the model with high accuracy.

- **Sentence Correction using RNN**
  - **Scope**: Social Media is the platform where people can communicate with each other by creating, exchanging, or sharing their ideas in a virtual network. Most people are using social media to express their feelings in text. Most of the ML/DL models used these texts to determine the sentiments or to predict any criminal activities and many more NLP-related tasks. The ML and DL models are trained in the traditional language, mostly English for any NLP-related task. Nowadays people use short forms/abbreviations like (ppl for people, 2 for to, wen/whn for when, and many more) in their texts which might not be very helpful in doing NLP-based tasks. The objective here is to build a Sentence correction model using RNN while preserving sentiment, name, and entities.
  - **Roles and Responsibilities:** Working on data cleaning, unifying the data scale, and performing EDA on it.

- **Marketing tool to automate the Whatsapp Multimedia Message**
  - **Scope**: The prime directive of the project is to make a tool that helps to automate WhatsApp multimedia messages for marketing, promoting the product or services, and also to increase customer engagement. The application has 2 parts viz.
    - Entire Client management and Subscription management (Developed with PHP)
    - Marketing tool to automate the Whatsapp Multimedia Messages which is used by the Subscribed customers. (Developed with Node.js)
  NPM packages, such as venom-bot, aws-sdk, node-html-to-image are being used to build this pilot project.

- ○ **Roles and Responsibilities**: Majorly working on converting the HTML content to images followed by storing it to the AES S3 storage and sending the multimedia messages using a web service call.

- ● **Traffic Controller Management System**

  Traffixo is an Australian-based traffic management company that provides local search for different traffic management services in Australia over mobile apps. The company is headquartered in Sydney, Australia. The primary thought of Traffixo is to replace the Yellow Pages with a database of information that users could call to receive current information about local business listings. **Traffixo** is an application to bridge the gap between the traffic controller, construction material service provider, and customer, based in Sydney, Australia. The app was built for both **Android & iOS** platforms.

  - ○ **Scope:**
    - ■ A single app for different users to solve different purposes. Traffic controllers can find leads and submit their quotations to their potential clients.
    - ■ The customer will log in to the system and put their customized requirements along with the location, dates, and number of traffic controllers required. They also can review the different quotations provided by different Vendors and make a call to them for settlement.
    - ■ The search engine finds the top nearest vendors of the job location and sends the request for the quotation for that job.
    - ■ The vendor deals with the end customer requirements by submitting their quotation for the posted job requirements.
    - ■ If required the vendor can also hire the pieces of equipment required to provide the services and additional traffic controllers (manpower) if required
    - ■ There is a membership subscription module for Vendor, Equipment Supplier, and Traffic Controller. Depending upon their subscription plan they will get Lead (Job Request) and they can also recharge the subscription through the app.
  - ○ **Technology Stack:** HTML, CSS, JavaScript, jQuery, CodeIgniter, MySQL, Ionic, and Cordova
  - ○ **Roles and Responsibilities:** Requirement gathering, database designing, Server-side dynamic programming, back-end web services development, front-end web services integration.

- ● **Microfinance Application**

  Mukti Community Development Fund (MCDF) is one of **Mukti's** projects which is creating women entrepreneurs in villages. An autonomous body elected from **Self Help Group** (SHG) members. Low-income group women are involved in the **SHG** concept and they are developing themselves. The project provides essential entrepreneurship training and microloans for business development.

  MCDF is a group of **SHG**s. One member from each **SHG** comes to take part in MCDF to take the project autonomously forward. MCDF gets funds from Mukti and small savings from its members which are being lent to its members.

  - ○ **Scope:**
    - ■ A web application that manages the transaction records of the funds, more specifically a small-scale banking management system.
    - ■ Admin can get a dashboard view of the periodical transactions of all the funds and get the automated report by email on the everyday end.
    - ■ The consumer can log in to their mobile application (**both Android & iOS**) to check their savings and loan statements.
    - ■ The other officials who are managing the funds can enter the daily financial transactions of the funds'.
  - ○ **Technology Stack:** HTML, CSS, JavaScript, jQuery, CodeIgniter, MySQL, Ionic, and Cordova
  - ○ **Roles and Responsibilities:** Requirement gathering, database designing, Server-side dynamic programming, back-end web services development, front-end web services integration, Communicating with the client end to demonstrate the application as well as to resolve the support tickets.

- **Hospital Management System**

  The Hospital Management System project helps to solve the complications coming from managing all the paperwork of every patient associated with the various departments of hospitalization with confidentiality. HMS provides the ability to manage all the paperwork in one place, reducing the work of staff in arranging and analyzing the paperwork of the patients. It manages the data related to all departments of healthcare.

  - **Scope:**
    - The hospital reception desk will register the patient record and book an appointment for IPD and OPD.
    - During the OPD visit, the doctor notes down the findings and prescribes the investigations and medicines in the system using a doctor login, and automatically doctor visits will be charged and an invoice will be generated.
    - During IPD admission the patient will be allowed to a bed and during treatment, the patient can be transferred to a new bed.
    - For every patient visit of an IPD patient, a new prescription has been generated and approved by the doctor.
    - During prescription approval, all the medicine requisition will be forwarded to the medicine store, and pathology and radiology tests requisition will be also generated.
    - From the pathology and radiology department, samples will be collected and reports will be uploaded to the system.
    - During treatment, at any time the patient party can pay the part payment and get an intermediate bill summary.
    - During patient discharge, all the test prices, consultant charges depending upon the number of prescriptions, bed charges will be calculated and a bill summary will be generated.
    - A module for hospital management from which the floors, departments, and beds along with bed charges will be recorded
    - Doctor management from where hospital admin can add doctors and their visits and OPD time slots.
  - **Technology Stack:** HTML, CSS, JavaScript, jQuery, CodeIgniter, MySQL, Ionic, and Cordova
  - **Roles and Responsibilities:** Server-side dynamic programming, back-end web services development, front-end web services integration, Communicating with the client end to demonstrate the application as well as to resolve the support tickets.

Skill Summary

- **Skill:**
  - **Programming Language** - Python(**Proficiency - Intermediate**), Javascript (**Proficiency - Intermediate**), SQL (**Proficiency - Intermediate**), PHP (**Proficiency - Advanced**)
  - **Machine Learning Algorithms**- Classification & Regression Model, SVM, Decision Tree, XGBoost, Unsupervised ML-like DBSCAN, Clustering, Back Propagation, CNN, RNN like LSTM. (**Proficiency - Intermediate**)
  - **Web Development Framework** - Node.js (**Proficiency - Intermediate**), Angular & React (**Proficiency - Intermediate**).
  - **Cloud Server** - AWS Cloud (**Proficiency - Intermediate**), IBM Cloud (**Proficiency - Intermediate**).
- **Library:**
  - **Machine Learning** - sci-kit-learn, NumPy, Pandas, Matplotlib, seaborn.
  - **Web Development** - jQuery, Express.js, Sequelize, Nodemon, PM2 Processes Manager, Axios.
- **Web Server**: Apache, Nginx
- **IDE:** Jupyter Notebook, Visual Studio Code, Notepad++
- **Database:** MySQL, PostgreSQL, MongoDB
- **Work Flow Engine**: JBPM (**Proficiency - Intermediate**).
- **ELK Stack:** Elasticsearch, Logstash, Kibana
- **Web Services**: REST
- **Developer Tool:** Git **(Platform - GitHub, Bitbucket, GitLab),** Trello, Postman (**API Testing tool**), Slack

Education Background

Technical Qualification

Degree	Stream	Institute	University	Year of Passing	Percentage of Marks	DGPA
Bachelor of Technology	Computer Science and Engineering	Camellia Institute of Technology	West Bengal University of Technology	June 2016	77.3%	8.48

Training & Certifications

- Applied AI & Machine Learning by Applied AI Course, Hyderabad, Telangana.
- Neural Network & Deep Learning by Andrew Ng from Coursera.
- Getting Started With AWS Machine Learning from Coursera.
- IBM Cloud Essentials authorized by IBM & issued by Coursera.
- Containers & Kubernetes Essentials issued by IBM.
- IBM watsonx.ai Technical Essentials issued by IBM.

Personal Details

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Date: Feb 7, 2024   **Signature**