Balakumaran E

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Summary

Logical and organized individual with a strong foundation in software engineering, capable of translating business requirements into innovative software solutions.

Experience

CommScope ARRIS (Formerly Motorola India) | Bangalore, Karnataka
Software Engineer | 07/2022 - Present

Intern - 07/2022 to 06/2023 | Contractor - 06/2023 to Present (Parent Company - Infobahn Softworld Pvt Ltd)

Responsibilities and Deliverables :

In my current role, I am responsible for developing and implementing various tools and features to enhance the efficiency and effectiveness of the QA team. These include:

Hardware builds forecasting tool :

- Developed a hardware builds forecasting tool for the QA team with admin rights and graphs using Kendo UI. Utilized Full Stack skills to create the tool, which allowed the QA team to forecast hardware builds and included admin functionalities and visual graphs.

Asset tracking tool :

- Created an Asset tracking tool with CRUD operations and automated Outlook mail reminders to managers, directors and vice presidents of the QA team. Leveraged Full Stack skills for the tool development and Python for sending emails using SMTP. This tool streamlined the asset tracking process of all the teams.

Daily summary report tool :

- Built a daily summary report tool that provides an overview of tested builds with reports and statistical graphs and allows users to send custom report mails. Utilized Full Stack skills and Kendo UI for the development of the tool and Python for automatically pushing the changes from the Powerpoint report to the database and to send mails on daily basis using cronjob. All the activities of updating the Powerpoint data to the database are handled in Jenkins.

AI Powered IoT Controller for Modem **(Applied for patent)** :

- Implemented a groundbreaking feature in a modem, resulting in the development of AI Powered IoT Controller integrated within a modem making it as a Smart modem . Utilized Python, Cloud AWS RDS, Machine learning, Docker and Linux to enhance the modem's capabilities.

QA Chatbot :

- Developed a chatbot using sequential neural network that has the knowledge of test cases, test plans, test cycles, and test results from JIRA. Incorporated Universal Sentence Encoders, TF-IDF, and cosine similarity to assist in finding similar PD's (Product Defects) and to provide test case suggestions for a particular PD. Hosted it using Gradio.

Skills Used:

- HTML, CSS, JavaScript, Kendo UI, PHP, MySQL : Utilized these web development technologies to create various tools, including the hardware builds forecasting tool, asset tracking tool, and daily summary report tool. Utilized these skills for frontend and backend development, database management, and creating interactive user interfaces.
- Python : Implemented Python programming language for multiple purposes. Used it in QA chatbot for script development and for fetching data from JIRA to feed into the model, for sending automated Outlook mail reminders in the asset tracking tool using SMTP, automatically pushing changes from the Powerpoint report to the database in the daily summary report tool, and enhancing the modem's capabilities in the AI Powered IoT Controller.

- Machine Learning: Applied machine learning techniques in the development of the AI Powered IoT Controller for the modem. Leveraged machine learning algorithms and models to enhance the modem's functionality and to make it a Smart modem. This likely involved tasks such as data preprocessing, training models, and deploying the machine learning system.
- Cloud AWS RDS : Utilized Amazon Web Services (AWS) Relational Database Service (RDS) for managing and storing data related to the AI Powered IoT Controller.
- Docker : Utilized Docker, a containerization platform, in the development of the AI Powered IoT Controller. It likely facilitated the deployment and management of the modem's software components.
- Jenkins : To run scheduled jobs that execute Python scripts. It handles the coordination, execution, and reporting of the tasks, helping to streamline and automate the process and reduce manual effort.
- OS used : Windows for Development, Linux for Cronjob and Deployment

Devtown (Formally Shape-AI)
Full Stack (Training and Internship) | 08/2021 - 11/2021

Responsibilities and Deliverables :

- Developed and maintained responsive web applications using HTML, CSS, JavaScript, React JS, Node JS, Express JS, and MongoDB.
- Implemented front-end designs with HTML and CSS, ensuring a consistent and responsive user experience across all devices
- Utilized JavaScript and React JS to enhance website interactivity and functionality, creating dynamic and engaging user interfaces
- Integrated server-side logic using Node JS and Express JS to build robust and scalable web applications
- Developed and maintained RESTful APIs using Node.js and Express.js for efficient data retrieval and manipulation
- Designed and implemented MongoDB databases to store and retrieve data efficiently
- Collaborated with team members to review code, provide feedback, and implement best practices for code optimization and maintainability

Skills Used :

- HTML: Created structured and semantic web pages, incorporating appropriate tags and elements
- CSS: Implemented styling and layout techniques to achieve visually appealing and responsive designs
- JavaScript and React JS : Developed interactive and dynamic features, enhancing user experience and functionality
- Node JS: Developed server-side applications, handling requests, and managing data flow
- Express JS: Built robust and scalable web APIs, implementing routing and middleware for efficient server operations
- MongoDB: Designed and implemented NoSQL databases, ensuring efficient data storage and retrieval

Edusera
Problem Setter Intern | 08/2021 - 09/2021

Responsibilities and Deliverables :

- Developed a comprehensive library of C language programming questions, covering a wide range of topics and difficulty levels
- Created solutions and test cases to accompany each question, ensuring accuracy and effectiveness in assessing students' understanding
- Collaborated with a team of subject matter experts to review and refine the content, ensuring it aligned with the learning objectives and curriculum requirements
- Collaborated with the technical team to integrate the question bank into the company's server, ensuring smooth access and usability for users
- Maintained an up-to-date knowledge of C language programming concepts and best practices to ensure the relevance and quality of the content
- Utilized strong C language programming skills to write clear, concise, and accurate code examples for instructional purposes

Skills Used :

- Proficient in C language programming, demonstrated through the creation of accurate and efficient code examples
- Strong problem-solving skills, enabling the development of challenging and thought-provoking programming questions
- Attention to detail, ensuring the accuracy and quality of solutions and test cases
- Collaboration and communication skills, effectively working with subject matter experts and technical teams
- Ability to adapt to evolving educational requirements and incorporate feedback into content development

Skills

C, C++, Java, JavaScript, Python, HTML5, CSS3, Sass, PHP, MySQL, React JS, Node JS, Express JS, Mongo DB, AWS RDS, GCP Cloud Run, Front-End Development, Back-End Development, Full Stack Development, MERN Stack, Machine Learning, Docker, Linux, Data Structures, Algorithms, Prompt Engineering, Jenkins

Education

Kongu Engineering College | Erode, Tamilnadu
BE Electronics and Communications Engineering | 05/2023

- Received Top 5% Students Scholarship in 2023
- Graduated with a CGPA of 9.21
- Winner in coding competitions like "Mechoder", "Acumen2K22", "Nexux'22" conducted by Kongu Engineering college and won cash prizes
- 2nd place in C Coding Carnival (2022) and Finalist in C Coding Carnival (2021) conducted by Kongu Engineering College and won cash prizes

Languages

English, Tamil, Malayalam, Hindi

Personal Projects

E-commerce website with payment integration using Razorpay : Developed an e-commerce website from scratch, incorporating features like product listings, shopping cart functionality, and integration with the Razorpay payment gateway for secure transactions.

Automated Social Media content generator and Uploader using Python, Cloud, and respective Social media API's : Created a Python-based automation tool that generates social media content and automatically uploads it to the respective platform. Leveraged cloud services and social media API's for seamless integration.

Tic Tac Toe game using HTML, CSS, JavaScript : Built a classic Tic Tac Toe game using web technologies, providing a user-friendly interface and interactive gameplay.

Task managing API : Developed a RESTful API for managing tasks, enabling users to create, update, and track their tasks. Leveraged Node.js, Express.js for backend logic, and MongoDB for data storage.

Personal Notepad using Java Swing : Created a simple desktop application using Java Swing that serves as a personal notepad, allowing users to create, save, and manage their notes.

Certifications

JavaScript Essentials Certification from *CISCO*

Cloud Computing from *NPTEL*

Diploma in Computer Applications (DCA) from *CSC*

HTML certification from *Academy Europe*

Java Nano Degree, **DSA using Java**, **DBMS certification** from *Prepinsta* .

WordPress developer certification, **Object-oriented programming certification**, **MySQL database development mastery certification**, **Frontend developer certification** from *Udemy*

Getting started with AWS certification from *Simplilearn*

Fundamentals of DevOps, **Python for automation** from *Tutorials Point*