

SUBHAMAY BOSE

Senior Backend Engineer & Team Lead • Node.js, Python & Cloud-Native Microservices

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PROFESSIONAL SUMMARY

Backend-focused software engineer with 9+ years of experience building and maintaining web applications and cloud-native microservices, currently leading delivery on an enterprise AIOps platform at IBM India. Team Lead for the AIOps 2.0 delivery team — the upgraded release of Digital Operations, an AIOps product built by the team for observation, orchestration, and automation of complex hybrid cloud IT environments— and a senior developer on the product since 2022. Hands-on with Node.js and Python microservices, containerised with Docker and orchestrated on Kubernetes and Red Hat OpenShift; REST API development; and integration of third-party ITSM and API-based monitoring tools, including SAP alert monitoring through SAP Solution Manager, SAP Focused Run, and SAP Cloud ALM. Earlier experience delivering full-stack web and hybrid mobile applications end-to-end across traffic management, microfinance, and healthcare, plus hands-on machine learning and deep learning model development. AWS Certified Developer – Associate, with a career interest in AI and automation architecture.

CORE TECHNICAL SKILLS

Languages: JavaScript, Python, PHP, SQL, Elasticsearch Query Language

Backend & Frameworks: Node.js, LoopBack, Express.js, Sequelize, CodeIgniter, PM2 Process Manager, Nodemon, Axios

Frontend & Mobile: React, Angular, HTML, CSS, jQuery, Ionic, Cordova

Databases: PostgreSQL, MySQL, MongoDB

Cloud & DevOps: AWS, IBM Cloud, Docker containerisation, Kubernetes, Red Hat OpenShift

AIOps & Monitoring: AIOps platform development, incident management and workflow automation, third-party ITSM tool integration, SAP Solution Manager, SAP Focused Run, SAP Cloud ALM

Data, Search & Workflow: Apache Kafka, Elasticsearch, Logstash, Kibana (ELK Stack), Drools, JBPM

AI & Machine Learning: Classification and regression models, SVM, Decision Tree, Random Forest, XGBoost, DBSCAN and clustering, backpropagation, CNN, RNN/LSTM; scikit-learn, NumPy, Pandas, Matplotlib, Seaborn; IBM Watson services

Web Servers & Services: Apache, Nginx, REST web services

AI Coding Agents: Anthropic Claude Code, OpenAI Codex, IBM BOB

Tools & Platforms: Git (GitHub, Bitbucket, GitLab), Jira, Trello, Postman, Insomnia, Slack, Visual Studio Code, Jupyter Notebook

PROFESSIONAL EXPERIENCE

IBM India Pvt. Ltd. February 2022 – Present

Senior System Engineer

Digital Operations / AIOps 2.0 — an AIOps product built by the team, providing observation, orchestration, and automation for complex hybrid cloud IT environments, with a unified view of IT operations and business processes, end-to-end enterprise application management, and automation of command centre and service desk operations. The platform integrates a wide range of APM tools; SAP alert monitoring is handled through SAP Solution Manager, SAP Focused Run, and SAP Cloud ALM.

Team Lead – Delivery Team | AIOps 2.0 June 2025 – Present

- Lead the Delivery Team for AIOps 2.0, the upgraded release of the Digital Operations platform.
- Develop and maintain scalable microservices in Node.js and Python to support the platform.
- Containerise microservices and deploy them on Kubernetes for orchestration and scalability.
- Integrate third-party IT Service Management (ITSM) tool APIs to enable communication and data exchange between the platform and the ITSM system for incident management and workflow automation.
- Collaborate with architects to design and implement microservice architecture best practices and integration patterns.

Senior Developer | Digital Operations February 2022 – June 2025

- Worked as a senior developer on Digital Operations, contributing to the AIOps product developed by the team.
- Built and maintained platform microservices in Node.js and Python, containerised and deployed on Kubernetes.

- Implemented API integrations enabling the platform to ingest and act on alert data from a broad range of monitoring and ITSM tools.
- **Technology stack:** Node.js with LoopBack, React, Python, IBM Watson services, Kubernetes, Apache Kafka, Elasticsearch, Drools, PostgreSQL.

DTech System January 2020 – February 2022

Application Developer – AI

- Developed machine learning and deep learning models for prediction and computer vision use cases, covering requirement gathering, data cleaning, scale unification, exploratory data analysis, model selection and accuracy improvement.
- Built REST APIs and backend services in Node.js and Express.js for data collection and application integration, including automation services deployed against cloud storage and messaging providers.
- Selected model architectures against deployment constraints, including computationally efficient architectures suitable for embedded systems.

DTech System November 2016 – January 2020

Web Developer

- Delivered full-stack web and hybrid mobile applications for clients in traffic management, microfinance and healthcare, using PHP/CodeIgniter, MySQL, jQuery, Ionic and Cordova.
- Handled requirement gathering and database design, then implemented server-side dynamic programming and back-end web services.
- Integrated front-end interfaces with back-end web services across web and Android/iOS application targets.
- Communicated directly with clients to demonstrate applications and resolve support tickets.

SELECTED PROJECTS

Enterprise & Web Application Development

Traffic Controller Management System (Traffixio) — *Sydney, Australia — Android & iOS*

- Built a multi-role marketplace application bridging traffic controllers, construction material and equipment suppliers, and customers for an Australian traffic management company.
- Implemented customer job posting with location, dates, and manpower requirements; a search function to identify the nearest vendors for a job location and issue quotation requests; vendor quotation submission; and equipment and additional manpower hiring.
- Implemented a membership subscription module for vendors, equipment suppliers, and traffic controllers, determining lead allocation by subscription plan, with in-app recharge.
- **Role:** Requirement gathering, database design, server-side dynamic programming, back-end web services development, front-end web services integration. **Stack:** HTML, CSS, JavaScript, jQuery, CodeIgniter, MySQL, Ionic, Cordova.

Microfinance Application — *Mukti Community Development Fund (MCDF)*

- Developed a small-scale banking and fund transaction management web application for an autonomous body of Self Help Groups providing entrepreneurship training and microloans to low-income women in villages.
- Built an administrator dashboard giving a periodic view of transactions across all funds, with an automated end-of-day report delivered by email, and data entry for officials recording daily fund transactions.
- Delivered an Android and iOS consumer application allowing members to check savings and loan statements.
- **Role:** Requirement gathering, database design, server-side dynamic programming, back-end web services development, front-end web services integration, client demonstrations and support ticket resolution. **Stack:** HTML, CSS, JavaScript, jQuery, CodeIgniter, MySQL, Ionic, Cordova.

Hospital Management System — *IPD / OPD administration and billing*

- Built a hospital administration system replacing departmental paperwork with a single confidential record, covering patient registration and IPD/OPD appointment booking at the reception desk.
- Implemented the clinical workflow: doctor login for findings, investigations and prescriptions with automatic visit charging and invoice generation; bed allotment and inter-bed transfer for IPD patients; per-visit prescription generation and approval; and routing of approved medicine requisitions to the medicine store and pathology/radiology test requisitions to those departments, with sample collection and report upload.

- Implemented billing: interim part payments with bill summaries, and discharge billing calculating test prices, consultant charges by prescription count, and bed charges. Built management modules for floors, departments, beds and bed charges, and for doctors, their visits and OPD time slots.
- **Role:** Server-side dynamic programming, back-end web services development, front-end web services integration, client demonstrations, and support ticket resolution. **Stack:** HTML, CSS, JavaScript, jQuery, CodeIgniter, MySQL, Ionic, Cordova.

WhatsApp Multimedia Marketing Automation Tool — *Pilot product*

- Contributed to a two-part marketing product: client and subscription management built in PHP, and a Node.js tool used by subscribed customers to automate WhatsApp multimedia messages for product and service promotion and customer engagement.
- **Role:** Converting HTML content to images, storing them to AWS S3, and sending multimedia messages via web service calls. **Stack:** Node.js, PHP, AWS S3; npm packages venom-bot, aws-sdk, node-html-to-image.

Machine Learning & AI

Heart Disease Prediction — *Machine Learning*

- Built a model to predict heart disease from attributes including blood pressure, cholesterol levels, and heart rate, using a dataset from the UCI Machine Learning Repository supplemented with current-time data from reliable sources.
- Evaluated Random Forest, XGBoost, and SVM; the Random Forest Classifier produced the best accuracy. Developed Express.js APIs to collect data from devices.
- **Role:** Requirement gathering, API development for data collection, exploratory data analysis, data cleaning, and model comparison.

Face Mask Detection — *Computer Vision*

- Built a face-mask detection model for safety monitoring in transportation, densely populated areas, residential districts, and large-scale manufacturing environments.
- **Role:** Identifying an architecture able to run on computationally efficient embedded systems and building the model to high accuracy; selected MobileNetV2 for deployability on simple embedded systems.

Product Backorder Prediction — *Machine Learning*

- Analysed backorder data to identify why particular products are out of stock at the point of customer intent, supporting efforts to minimise backorders. Used a Random Forest Classifier for computational efficiency.
- **Role:** Data cleaning, unifying data scale, exploratory data analysis, and model building to high accuracy.

Sentence Correction using RNN — *Natural Language Processing*

- Built a sentence-correction model to normalise the short forms and abbreviations common in social media text into standard language while preserving sentiment, names, and entities, improving the usability of such text for downstream NLP tasks.
- **Role:** Data cleaning, unifying data scale, and exploratory data analysis.

EDUCATION

Bachelor of Technology, Computer Science and Engineering, June 2016

West Bengal University of Technology — 77.3% (DGPA 8.48)

CERTIFICATIONS & TRAINING

- AWS Certified Developer – Associate
- IBM Generative & Agentic AI Expert – Developer
- IBM watsonx.ai Technical Essentials — issued by IBM
- Containers & Kubernetes Essentials — issued by IBM
- IBM Cloud Essentials — authorised by IBM, issued by Coursera
- Neural Networks & Deep Learning — Andrew Ng, Coursera
- Getting Started with AWS Machine Learning — Coursera
- Applied AI & Machine Learning — Applied AI Course, Hyderabad, Telangana

ADDITIONAL INFORMATION

Languages: English, Bengali, Hindi