

# DHIMAN SUTRADHAR

Technical Lead | Backend Architect | AI-Native Software Engineer

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## PROFESSIONAL SUMMARY

Technical Lead and Backend Architect with 15+ years of experience building and shipping production systems, cloud-native web applications, customer-facing SaaS products, internal tools, workflow automations, and enterprise software. Experienced in Python, Java, FastAPI, Spring Boot, AWS, microservices, software architecture, service-oriented architecture, data stores, queues, event-driven workflows, cloud infrastructure, front-end, back-end, and full-stack development. Applied AI-native software development using Strands Agents, Amazon Q Developer, Kiro CLI, Claude, ChatGPT, prompt engineering, and AI-assisted evaluation to accelerate application development, troubleshooting, refactoring, debugging, documentation, and delivery while maintaining security, privacy, reliability, maintainability, accuracy, and product quality standards. Strong track record translating business requirements and ambiguous customer needs into solution design, technical plans, production-ready systems, and iterative product improvements.

## CORE SKILLS

**Technical Skills:** Python, Java, JavaScript, TypeScript, SQL, Node.js, Spring Boot, Spring MVC, FastAPI, REST APIs, Full-Stack Development, Application Development, Software Architecture, UI Development, Solution Design

**Architecture & Integration:** Microservices, Service-Oriented Architecture, Distributed Systems, SaaS, Multi-Tenant Architecture, Enterprise Software, System Integration, API Connectivity, Design Patterns, Business Requirements

**Agentic AI:** Strands Agents, AWS Bedrock, Multi-Agent Workflows, Prompt Chaining, Routing, Orchestrator-Worker, Supervisor Agent, Agent Handoff, Tool Use/Function Calling, ReAct, Memory-Augmented Agents, Human-in-the-Loop Approval, Task Decomposition

**AI, Data & Imaging:** LangGraph, LangChain, OpenAI, HealthOmics, Nextflow, DICOM Processing, Medical Imaging, Biomedical Data Processing, Analytics, Prompt Engineering, AI Coding Agents, Amazon Q Developer, Kiro CLI, Claude, ChatGPT, Tesseract

**Cloud:** AWS, ECS, EKS, AWS Batch, S3, RDS, IAM, CloudWatch, Docker, Kubernetes, Terraform, GitHub Actions, Jenkins, Amazon ECR, AWS Step Functions, CI/CD, Monitoring, LangFuse

**Databases, Messaging & Quality:** PostgreSQL, MySQL, MongoDB, MSSQL, Redis, DynamoDB, NoSQL, Hibernate ORM, Kafka, JMS, WebSocket, Quality Assurance, Unit Testing, Integration Testing, UAT, Triage, Root Cause Analysis

**Frontend & Leadership:** ReactJS, AngularJS, Bootstrap, Ionic, Web Applications, Customer-Facing Applications, Leadership, Mentoring, Product Quality, Documentation, Stakeholder Communication, Adaptable, Motivated

**Testing & Practices:** PyTest, JUnit, unit testing, integration testing, Git workflows, pull requests, code reviews, documentation

## PROFESSIONAL EXPERIENCE

### Technical Lead / Backend Architect | Jun 2018 - Present

Forgeahead Solutions Corp. | Surrey, Canada

- Architected key components of cBioX, a biomedical research and drug-discovery platform that accelerates data preparation, transformation, curation, analysis, and publishing workflows.
- Built cBioX Virtual Research Assistants using Strands Agents, Python, FastAPI, ReactJS, Nextflow, AWS Batch, ECS, and AWS HealthOmics, orchestrating multi-agent AI workflows and containerized data-processing pipelines.
- Implemented agentic AI design patterns including Prompt Chaining, Routing, Orchestrator-Worker, Tool Use/Function Calling, ReAct, Multi-Agent Collaboration, Supervisor/Manager Agent, Agent Handoff, Memory-Augmented Agent, and Human-in-the-Loop Approval.
- Contributed to DICOM medical imaging workflows using Strands Agents, Nextflow, AWS HealthOmics runs, and Python pipelines for HIPAA-aware de-identification, metadata extraction, and PNG frame generation.
- Leveraged AI-assisted engineering tools including Amazon Q Developer, Kiro CLI, Claude, and ChatGPT to accelerate software development, troubleshooting, refactoring, debugging, documentation, prompt design, output evaluation, and delivery while validating artifacts against security, reliability, accuracy, maintainability, and product quality standards.

- Designed multi-omics, clinical, imaging, pharmacological, and DICOM data workflows to help researchers curate, transform, and publish proprietary datasets for secondary analysis.
- Led development of Highwire, a cloud-based construction risk-management platform used by enterprise clients including Google, Intel, Harvard, Tesla, and Samsung, contributing to risk reduction of up to 60%.
- Architected secure, customer-facing, service-oriented microservices using Java, Spring Boot, AngularJS, Kafka/JMS, PostgreSQL, MongoDB, and NoSQL patterns, delivering 99.9% uptime and supporting millions of daily transactions.
- Automated extraction of contractor safety, compliance, and financial data from PDF and scanned/OCR documents using Tesseract OCR and AWS Textract, improving structured data availability for risk and financial analysis.
- Modernized legacy applications and migrated data across MSSQL, MongoDB, and PostgreSQL, achieving ~50% performance improvement, ~80% lower maintenance effort, and 45% query performance improvement.
- Implemented instrumentation, observability, CI/CD pipelines, cloud infrastructure delivery, triage, and root cause analysis practices using GitHub Actions, Amazon ECR, and EKS, improving release cadence, reliability, analytics visibility, and developer productivity.
- Partnered with product, design, data, QA, and platform stakeholders to translate business requirements and operational needs into solution designs, workflow automations, quality assurance practices, integration testing support, user acceptance testing, and production-ready releases.

### **Technical Lead | Oct 2016 - Jun 2018**

Forgeahead Solutions Pvt. Ltd. | Pune, India

- Led development of ENACT Solar, a customer-facing SaaS web application for solar and storage asset management, translating business requirements into solution design for customers to design, monitor, and optimize assets.
- Designed and developed server-side functionality, RESTful APIs, and real-time updates using Java, Spring Framework, Hibernate, and WebSocket for scalable full-stack application development.
- Implemented Salesforce data synchronization using Azure Logic Apps, supporting system integration, automating business processes, and reducing manual effort by 80%.
- Architected database schema and queries for efficient asset data management, improving query performance by 50% and reducing data retrieval time by 40%.
- Configured AWS cloud technologies and CI/CD pipelines using Jenkins, Amazon ECR, and ECS, supporting 5x user growth with improved security controls, quality assurance, and more frequent releases.

### **Senior Software Development Engineer | Apr 2014 - Oct 2016**

Forgeahead Solutions Pvt. Ltd. | Pune, India

- Built a Gmail-integrated communication and ad-hoc project-management solution using Play Framework to streamline collaboration, task coordination, and system integration workflows.
- Developed REST APIs using Restify and responsive front-end web interfaces using AngularJS and Bootstrap to support reliable front-end and back-end communication.
- Configured AWS environments with custom policies and automation scripts; implemented CI/CD pipelines using Jenkins, Amazon ECR, and ECS to improve deployment efficiency.

### **Software Engineer / Associate Software Engineer | Jul 2010 - Apr 2014**

Forgeahead Solutions Pvt. Ltd. | Pune, India

- Developed MedSolis healthcare collaboration and patient-management software focused on patient engagement, clinician communication, and improved care delivery.
- Built responsive web applications using Backbone.js and hybrid iOS/Android applications using AngularJS and Ionic for cross-platform healthcare access.
- Designed application architecture, integrated WebSocket-based real-time communication, and engineered Spring Framework REST APIs for efficient data handling.

### **EDUCATION & CERTIFICATION**

Bachelor of Technology, Computer Science & Engineering | ICFAI University | 2010

AWS Certified Developer - Associate | Apr 2022