# Sanket Dharwadkar

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## EXPERIENCE

**Software Development Engineer II – Amazon Web Services** November 2021 – Present

- Architected and shipped multiple microservice API enhancements for AWS HealthImaging in Java and Rust reducing large DICOM-study metadata fetch times by 80% and improving overall system throughput by 3x.
- Designed and implemented an event-driven pipeline using AWS Lambda and AWS Step Functions to support industry-standard DICOM transfer syntaxes, processing 1TB+ imaging data per day with <200 ms end-to-end latency.
- Built and maintained production canaries and end-to-end observability using Infrastructure-as-Code (CloudFormation) and AWS CloudWatch, driving a 70% reduction in post-launch incidents.
- Led 12 engineers through 3 major API feature releases - owning design reviews, writing OpenAPI specs, and coordinating secure OIDC authentication flows while guiding junior engineers on launch checklists and canary tests.
- Integrated AWS CloudTrail audit logging for all HealthImaging APIs via CloudFormation, enabling automated security compliance checks and generating real-time alerts for anomalous API calls.
- Mentored interns and junior engineers on microservices best practices and API design, co-authoring their design docs and RAPID plans, resulting in their projects being delivered on schedule with aligned quality gates.
- Coordinated cross-team dependencies with Principal PM and Sr. SDM during each launch week - managing CI/CD merges (GitHub Actions and internal pipelines), driving WBR reporting, and publishing documentation.
- Served as security champion across multiple engineering teams, conducting regular security reviews, threat modeling sessions, and implementing security-by-design principles, resulting in zero critical vulnerabilities and 100% compliance with HIPAA and internal security assurance requirements.
- Received "Customer's Voice" accolade by the healthcare business unit for developing a key security feature

**Software Development Engineer – Amazon Web Services** April 2020 – November 2021

- Developing an open-source solution (SWB) to provide researchers a one-click access to AWS compute resources
- Integrated Serverless to manage cloud resource deployment and allow efficient rollback strategy and maintainability
- Responsible for the design and development for the product's integration test framework, among other features
- Using NodeJS framework as backend server, AWS Lambda for hosting business logic and ensuring product uptime
- Designing and developing key features using RESTful API design pattern and microservices patterns
- Building real-time applications using advanced JavaScript libraries and frameworks like React.js and Mobx
- Consistently promoted to new levels of responsibility, including mentoring interns, and shepherding them to success
- Built reputation among solution architects for proactively solving application issues and questions about usability
- Developing CI/CD pipeline process for automating building, testing and deployment of application

**Software Development Engineer - Abbott Laboratories** November 2018 – April 2020

- Developed point-of-care diagnostic medical data management software system RALS using .NET Framework
- Developed HL7, ASTM and POCT protocol interface for point-of-care medical device communication
- Used Entity Framework to manage SQL relational database tables for querying and modifying system data
- Configured database server for data storage and utilize SHA-256 cryptographic encryption to store patient data
- Implemented a GUI tool to generate and send mock patient results and hospital ADT order messages
- Built a user interface to provide a modern look by designing AngularJS components and navigation
- Awarded first place in the company's Hack-a-Thon event for developing the most innovative product feature

**Software Test Engineer - Abbott Laboratories** July 2017 – November 2018

- Responsible for conducting testing and quality assurance of a medical device data management system
- Developed and executed test plans for upcoming features of the software for medical device interfacing
- Constructed automated frontend UI tests and multi-threaded integration tests for ensuring software quality
- Developed mock TCP listeners for testing medical device communication using HL7, ASTM and POCT
- Created unit tests using C# NUnit framework and moq library to support feature development

**Software Engineer - Capgemini** August 2014 – May 2015

- Completed systems design training for object-oriented programming using C++, and web development languages
- Developed a medical image viewing PACS DICOM application using Java, HTML and CSS
- Resolved bottleneck situations by diagnosing server response and improved the system performance by 40%
- Followed agile methodology and maintained relational database for storing medical imaging information

- Employed multi-threading and multi-process programming to build simultaneous server querying GUI applications
- Used the Linux shell to perform DICOM image transfer to the database and performing load testing

## EDUCATION

- **Binghamton University** Master of Science in Biomedical Engineering May 2017
- **Mumbai University** Bachelor of Engineering in Biomedical Engineering May 2014

## SKILLS

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| **Programming Languages** | JavaScript, TypeScript, Python, Java, Rust, C#, MATLAB, SQL |
| **Web-based Technologies** | AWS (CloudFormation, EKS, DynamoDB, VPC), React.js, NodeJS |
| **Tools** | Git, Visual Studio, MATLAB, Azure, TFS, AutoCAD |

## CERTIFICATIONS

**Building RAG Agents with LLMs**: NVIDIA Deep Learning Institute August 2025

- Architected retrieval-augmented generation systems using LangChain Expression Language (LCEL) and LangServe with FastAPI backends
- Implemented dialog management systems with PyTorch-based state retention and slot filling for structured data extraction
- Deployed semantic similarity engines using NVIDIA AI Foundation Model endpoints and FAISS vector databases for efficient content retrieval
- Built modular LLM inference pipelines integrating GPT-4 and NGC-hosted foundation models with internal/external reasoning components
- Created interactive RAG applications using Gradio frontends connected to LangServe microservices architecture
- Engineered vector store integrations with FAISS for automated similarity queries and context window management, along with CUDA kernel optimization for better throughput
- Designed distributed training workflows across thousands of GPUs with advanced compute efficiency optimization strategies
- Implemented LLM-as-a-Judge evaluation frameworks for RAG system performance assessment and guard railing

**AWS Certified Cloud Practitioner**: Amazon Web Services August 2024

- Demonstrated comprehensive knowledge of AWS core services including EC2, S3, RDS, Lambda, and VPC architectures
- Applied AWS Well-Architected Framework principles for security, reliability, performance efficiency, and cost optimization
- Implemented Identity and Access Management (IAM) policies, roles, and multi-factor authentication for secure cloud environments
- Designed scalable solutions using Auto Scaling Groups, Elastic Load Balancers, and CloudFront CDN for high availability
- Configured monitoring and logging with CloudWatch, CloudTrail, and AWS Config for operational excellence
- Evaluated cost management strategies using AWS Cost Explorer, Budgets, and Reserved Instances for financial optimization
- Architected disaster recovery solutions with cross-region replication, backup strategies, and business continuity planning