

# Karandeep Bhardwaj

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## SUMMARY

Senior Full-Stack Engineer with 7+ years architecting scalable, AI-powered systems and cloud-native applications. Specialized in **LLM-based agentic workflows, serverless architecture**, and microservices processing 600k+ daily requests. Expert in **AWS (Bedrock, Lambda, Lex)**, modern full-stack development (Python, TypeScript, React), and building production **multi-agent AI systems**. Proven track record delivering **80% cost reductions** through intelligent automation and mentoring high-performing engineering teams.

## TECHNICAL SKILLS

**Languages:** Python, TypeScript, JavaScript, Java, Golang, SQL (Postgres), Ruby on Rails (Basics)

**Frameworks:** React, Next.js, Vue, Node.js, Express, Django, Kafka, GraphQL, Tailwind

**AI/ML:** LangGraph, LangChain, Amazon Bedrock, Model Context Protocol (MCP), Prompt Engineering

**Cloud:** AWS (Lambda, Bedrock, Lex, DynamoDB, S3, SNS, SQS), Docker, Kubernetes, Terraform, Jenkins, OpenShift

**Architecture:** Microservices, Serverless, Event-Driven, Multi-Agent Systems, Agentic Workflows

## EXPERIENCE

### Lead Software Engineer

Nov 2021 – Present

*SunLife Financial*

- Architected AI-powered call routing system using **LangGraph + LLM** reducing contact center costs by **80%** with intelligent authentication workflows processing retirement plan inquiries.
- Designed **Model Context Protocol (MCP)** integration enabling dynamic tool orchestration across multi-agent systems with 3-tier authentication (identify/single/multi-factor).
- Led migration from legacy systems to **serverless architecture** processing 600k+ daily requests achieving **100% availability** with 30% lower latency.
- Implemented **agentic workflow using Amazon Bedrock** with DynamoDB state persistence, routing 15+ retirement plan categories through intelligent conversation flows.
- Optimized **AWS End User Messaging SMS** integration and multi-Lambda orchestration (Lex, ANI lookup, OTP verification) reducing authentication resolution time by **65%**.
- Mentored 5+ developers in **LLM-based system design**, serverless best practices, and AI agentic patterns.

### Full Stack Engineer

Jan 2021 – Nov 2021

*Tecsyst Inc.*

- Architected cloud-native microservices from monolithic system using **event-driven architecture**, improving scalability to handle **50x concurrent requests** and increasing performance by **85%**.
- Led front-end modernization using **Storybook and atomic design principles** for component-based architecture, boosting development velocity by **25%** and improving developer experience.
- Engineered end-to-end customs compliance microservice using **AWS SAM, Lambda, SQS, and S3** with SFTP integration, delivering **\$900K annual cost savings**.
- Implemented comprehensive testing strategy using **Test-Driven Development (TDD)** with Jest and k6 load testing, ensuring system resilience during high-traffic events.
- Enhanced security through **OAuth implementation** for carrier integrations, managing secure token lifecycle.

### Full Stack Engineer

Jan 2020 – Jan 2021

*BIDGALA*

- Developed an e-commerce social platform, creating scalable full-stack web applications and RESTful APIs using Python (Django) for backend and React for frontend, deployed on AWS, while guiding 3 junior developers.

### Software Developer

Jan 2017 – Aug 2018

*Unisys Pvt. Ltd.*

- Developed enterprise applications in cross-functional Agile teams, establishing foundation in software development best practices and tooling.

## EDUCATION

### Concordia University

Montreal, Canada

*Master of Computer Science*

Jan 2019 – Dec 2021

### Chandigarh Engineering College

Chandigarh, India

*Bachelor of Computer Science*

Aug 2013 – June 2017

## CERTIFICATON

### AWS Solutions Architect - Associate

Nov 2023