

# Mitesh Agarwal

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**Summary:** Software Engineer with 3+ years of experience delivering high-performance distributed systems, cutting latency, and scaling data pipelines. Strong track record of redesigning architectures, optimizing services, and shipping production-grade solutions across multiple cloud platforms.

## WORK EXPERIENCE

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iSimcha Health, LLC   Software Engineer / San Jose, CA	October 2025 - Present
<ul style="list-style-type: none"><li>Built 10+ HIPAA-compliant RESTful APIs using <b>FastAPI</b> securing 35,000+ patient records across 20+ clinics by implementing <b>JWT</b>.</li><li>Designed drop-in OpenAI API replacements to harness open-source LLMs within local Kubernetes clusters, reducing operational AI costs by <b>40%</b>.</li></ul>	
NC State University   Software Engineer / Raleigh, NC	May 2025 - October 2025
<ul style="list-style-type: none"><li>Restructured AWS cloud architecture by leveraging Redis, <b>Celery</b> and AWS <b>S3</b> to increase scalability and reduce document processing time in Python service from <b>240</b> minutes to <b>5</b> minutes.</li><li>Improved data consistency by <b>30%</b> by implementing a centralized <b>Redux</b>-based global state store to replace local state store.</li></ul>	
Fathom Science, Inc   Software Engineer Intern / Raleigh, NC	May 2024 - August 2024
<ul style="list-style-type: none"><li>Spearheaded backend development of <b>Java Spring Boot REST</b> APIs serving marine data, reducing manual data retrieval time by <b>50%</b> and improving response time through <b>Redis</b> caching.</li><li>Developed a <b>React.js</b> dashboard consuming these APIs with dynamic filters and interactive maps, cutting load times by <b>60%</b>.</li><li>Deployed containerized services using <b>Docker + Kubernetes</b> manifests, improving reliability, environment parity, and rollout testing for the engineering team.</li></ul>	
Capgemini (Client: Cox Communications, USA)   Software Engineer / Mumbai, India	June 2021 - July 2023
<ul style="list-style-type: none"><li>Modernized legacy monolith into a high-performance microservices architecture, slashing API latency by <b>40%</b>, by implementing inter-service communication using Spring Boot and <b>gRPC</b>.</li><li>Automated legacy batch-processing workflows by building <b>AWS Glue</b> and <b>EMR</b> pipelines, enabling near real-time reporting for <b>1M+</b> subscriber records and cutting data availability delays from 24 hours to under 2 hours.</li><li>Optimized data layer performance, reducing query execution time by <b>50%</b>, by refactoring inefficient <b>SQL</b> queries and implementing composite <b>indexing</b>.</li><li>Implemented consolidated AWS <b>CloudWatch</b> Dashboards with custom metrics, integrated alarms, and <b>Splunk</b> logging, enhancing monitoring and observability across <b>12+</b> services.</li></ul>	

## PROJECTS

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NutiQuest (Full-Stack Web Development)   <i>React.js, TypeScript, MongoDB, Django, Gemini LLM</i>	
<ul style="list-style-type: none"><li>Led the development of a cloud-hosted application integrating <b>Gemini LLM</b> for barcode-based food recognition, enabling nutrition and sustainability analysis with <b>95% accuracy</b>.</li><li>Utilized Gemini's <b>2.5 Flash</b> model for recommending missing nutrients based on past consumption history.</li></ul>	
Custom Load Balancer (Distributed Systems)   <i>GoLang, Net/HTTP, GoRoutines</i>	
<ul style="list-style-type: none"><li>Architected and implemented a high-performance <b>HTTP load balancer in Go</b>, using goroutines and channels to support <b>10k+ concurrent connections</b> with round-robin request scheduling.</li><li>Built fault tolerance mechanisms (server health checks, automatic failover, retry logic), reducing downtime by <b>90% during backend failures</b> in test scenarios.</li></ul>	

## EDUCATION

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North Carolina State University, Raleigh, NC   <i>Master of Computer Science</i>	August 2023 - May 2025
Courses: Software Engineering, Design & Analysis of Algorithms, Object-Oriented Design & Development	<b>GPA: 3.89/4.0</b>
University of Mumbai, India   <i>Bachelor of Engineering in Information Technology</i>	August 2017 - May 2021
Courses: Computer Networks, Database Management Systems, Deep Learning, Algorithms	<b>GPA: 9.32/10.0</b>

## SKILLS

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Programming Languages	: Python, Java, C++, JavaScript, TypeScript, SQL, GoLang, Ruby
Frameworks & DB	: Flask, React.js, Express.js, Spring Boot, Django, FastAPI, Rails, MongoDB, MySQL, PostgreSQL, Redis
DevOps & Tools	: Linux, Postman, Docker, Jenkins, Github, Kubernetes, Putty, Jira, Splunk, Celery
Cloud Technologies	: AWS (S3, Lambda, Glue, EC2, DynamoDB, EMR, RDS, CloudWatch, Route 53)
Cloud Certifications	: Microsoft Certified Azure and Data Fundamental (AZ-900 and DP-900), Google Cloud Digital Leader