

Umang Desai

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Summary

Senior Software Engineer with over 10 years of experience designing, developing, and deploying scalable, high-performance software solutions. Expertise in AI-driven systems, including natural language processing and large language model (LLM) integration. Skilled in building distributed systems and cloud-native architectures using Python, Golang, and modern DevOps tools. Hands on, versatile engineer with an eye for simplicity and elegance in the software I write.

Skills

Languages and Systems: Node JS/Typescript, GoLang, JAVA, C/C++, Docker, Kubernetes, Jenkins, Swarm

Languages and Systems: Python, Golang, TypeScript, Java, C/C++, SQL, Regex, Docker, Kubernetes, Jenkins

Frameworks/Environments: AWS, GCP, Azure, Prometheus, Grafana, Fluentd, Elasticsearch, RabbitMQ, Kafka, Apache Camel

Databases: CockroachDB, AuroraDB, MySQL, MongoDB, MS-SQL, SQLite

DevOps and Tools: Git, JIRA, Agile, VSCode, Visual Studio, Eclipse, Netbeans, TOMCAT, Windows IIS

Specializations: NLtoSQL, Large Language Models (LLMs), Natural Language Understanding (NLU), Distributed Systems, Performance Optimization, Telemetry Services

Work Experience

Cisco

July 2023 – Present

Senior Software Engineer

- Lead design and development of Cisco's AI Assistant for FMC and CDFMC, building scalable services using Python, Golang, CockroachDB, and AuroraDB.
- Develop NLtoSQL systems to translate natural language queries into precise SQL, enhancing user interaction and data retrieval accuracy.
- Design processes to interpret user queries, mapping them to database datasets for efficient SQL query generation.
- Integrate Large Language Models to deliver contextually accurate responses, collaborating with data science teams to optimize output quality.
- Architect low-latency, high-availability backend services, achieving a 70% latency reduction through query optimization, caching, and indexing.
- Implement strategies to enhance system scalability and response times for AI-driven services.
- Collaborate effectively with DevOps, QA, and product management teams to ensure seamless feature integration and deployment.

Armorblox

May 2021 – July 2023

Senior Software Engineer

- Designing and developing Armorblox Data Protection using Regex and NLU (Natural Language Understanding) in GoLang, C and / or Python.

- Applying distributed system concepts like RabbitMQ, Kafka and Kubernetes in scaling the Armorblox Data Protection product to process large volumes of data in GCP and Azure cloud data centers.
- Designing and implementing configuration and incident management using SQL data stores and gRPC.
- Collaborating with cross functional teams like Product Management, Customer Support and Production Engineering for successful delivery of the product and best customer experience.
- Improve the code quality by resolving software defects and adding unit and integration test cases.

Kazuhm, Inc.

Aug 2018 – Present

Senior Software Engineer

- *Maintained and re-engineered* current Windows development stack (*C++*, *Visual Studio*, *WIX*).
- *Lead Migrating* Windows stack to newer technologies to enable cross-platform compatibility and optimized architecture across Kazuhm platform. (*GOLang*)
- *Designed, developed and tested* a *distributed* and *scalable* container deployment system (*Docker*) for distributed workloads using the Kazuhm platform.
- *Architected and configured* platform-wide logging framework (*Fluentd*) along with *ElasticSearch/S3* as storage and *Grafana* as UI.
- *Improved* the Kazuhm build server to ensure a continuous build and deployment process (*Jenkins*) and *improved* its efficiency by 50%.
- *Designed, developed and tested* telemetry service for Kazuhm Platform using *Prometheus* and *Grafana* as UI.
- *Implemented* internal APIs and RESTful web services.

George Mason Univ. Department of Computer Science

Aug 2017 – May 2018

Graduate Teaching Assistant (Software Engineering)

- *Conducting lectures and presentations.*
- *Grading* deliverables for a full scale SDLC project, assignments, presentation peer evaluations.
- *Mentoring* students on different stages of SDLC and conducting bi-weekly meetings for project review, enabling AGILE culture.
- Introduced a culture of *unit testing*.

George Mason Univ. Department of Computer Science

Jan 2017 – May 2017

Graduate Teaching Assistant (Object Oriented Programming)

- *Mentoring* undergraduates through office hours, teaching students of varying levels of understanding the *concepts of Java Object Oriented Programming*.
- *Conducting lectures and programming labs.*
- *Grading* assignments, labs, projects.

Fondo

Jan 2015 – Mar 2016

Co-Founder

- *Social event discovery application to correlate user and events geospatial data* and indicate suitable local events for a user.
- Designing and developing backend, databases and data-models.
- Maintain, monitor and review *development* of the application and *manage project deadlines*.
- Actively involved in *software architecture and product development*.

ESQ Business Services

Aug 2012 - Dec 2014

Software Engineer

- Designed, developed and tested module to *monitor JVM* on a host by *extracting telemetry data* using *JAVA, MSSQL* and *JMX*. This was achieved via a 3 tier *client-server-data backend architecture*.
- Designed and modeled a database for the data extracted. Then *developed advanced filtering* across *multiple Mbeans* for retrieving these metrics for *bandwidth friendly data pipelines*.
- Configured frameworks like *XStream* for configuration files and models, *log4j* for logging.
- Designed, developed and tested module to *monitor Linux via the proc fs to analyze system performance and uptime*. This was achieved with *JAVA and MSSQL*
- Developed a *parsing framework for system proc files* with *configurable polling mechanisms*.

Education

M.S Computer Science

George Mason University

2016-2018

GPA: 3.4

B.S Information Science and Technology

Pennsylvania State University

2008-2012

GPA: 3.0

Personal Projects

These and more projects can be found at github (handle: [umang-desai](#))

Content Addressable Network.

- Built a *scalable distributed hash table network*. The idea is to help manage a large hash table over the Internet like scalability. This can also support distributed data storage. Used: Java, RMI

Operating System

- Operating systems fundamental development. Implemented OS concepts like *synchronization primitives, process creation, multi-processing, virtual memory*. Used: C, gcc, vi

Two-Phase Commit Transaction System

- A *distributed durable key/value store* which supports *two-phase commit protocol*. It supports recovery and is *scalable* in that it supports multiple clients being able to connect to the master and issue a stream of *get/put/del* requests. Used: Java, RMI, SQLite

NFL Fantasy League Software Model & Architecture

- Gathered *requirements* and built *use cases*. Designed *static/dynamic class structures, sequence diagrams, state machines*. Used: Magic Draw, UML