

# Mihir Deshpande

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Software Engineer with 4+ years of experience designing and developing high-performance backend systems handling substantial request volumes. Proficient in microservice architecture with asynchronous processing and fault-tolerant design patterns, as well as database optimization across SQL and NoSQL databases. Experienced in LLM integration, prompt engineering, and GenAI implementation.

## EDUCATION

### Purdue University (Incoming)

M.S. Software Engineering

West Lafayette, IN

Aug '25 - May '27

### Pune Institute of Computer Technology

B.E. Electronics and Telecommunication — GPA: 3.97/4

Pune, India

Aug '17 - May '21

- Data structures and Algorithms, Object Oriented Programming, Operating Systems, Computer Networks, Machine Learning

## WORK EXPERIENCE

### Software Engineer

HelpShift

Pune, India

Mar '23 - Present

- Designed and implemented a high-throughput architecture for third-party LLM integration within a production chatbot service, supporting 1.5K requests per second while maintaining **four-nines availability** and latency reduction of **30%** through a fault-tolerant infrastructure.
- Engineered a Distributed Asynchronous Task Queue, leveraging Apache Kafka and Redis that **reduced system latency by 80%** and **load average by 30%** through offloading I/O and compute
- Spearheaded product internationalization initiatives by building AI-powered multi-language translation system and refactoring Timezone implementation across the services that increased the user engagement and **revenue growth by 20%**
- Mentored **10+** new engineers, providing guidance on best coding practices, code reviews, and troubleshooting techniques, leading to faster onboarding, improved code quality, and increased team productivity
- Resolved on-call incidents and collaborated with SRE teams to implement auto-scaling policies, reducing overnight CPU spikes by **35%**.

### Software Engineer

miniOrange Inc.

Pune, India

Aug '21 - Feb '23

- Enhanced system security by enforcing **OAuth 2.0**, JWT-based authentication, and multi-factor authentication (MFA), reducing unauthorized access incidents.
- Optimized Hibernate queries and indexed critical authorization tables, reducing database query execution time **by 30%**, improving role lookup speed.

## PROJECTS

### Clj-deepwalk

Clojure, Graphs, Machine Learning

[View Project](#)

- A Graph Embedding Library that converts complex Networks into Vector Embeddings using Cosine Similarity, for Machine Learning analysis. Recognized in [Clojure Deref](#)

### MCP Client for Ollama

Python, Ollama, MCP

[View project](#)

- Extensible MCP client for Ollama models
- Support for Git operations through MCP Git server, with interactive command-line assistant interface

### Aide

Python, OpenAI, OOP, Prompt Engineering

[View project](#)

- An Intelligent code practice tool that harnesses OpenAI to dynamically generate coding challenges, evaluate solutions, and provide detailed feedback across multiple difficulty levels.

## SKILLS

**Programming Languages:** Java, Clojure, Python, JavaScript

**Databases and Streaming:** MongoDB, PostgreSQL, Apache Kafka, Redis, Elasticsearch, YugabyteDB

**Frameworks and Libraries:** Spring Boot, Django

**Core Competencies :** Product Development, LLMs, Technical Leadership, Functional Programming, Distributed Systems

## PUBLICATIONS

### 3D Modelling using Generative Adversarial Networks

Python, Keras, Deep Learning, Tensorflow

[View Paper](#)

- Resolved limitations in existing 3D GANs and engineered a novel solution for generating varied 3D models of target objects, enhancing the efficiency of 3D modeling processes