# Prerana Puttaswamy

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Portfolio


## Education

**California State University, Long Beach** Expected May 2026
Master of Science in Computer Science

**Visvesvaraya Technological University, India** May 2024
Bachelor of Engineering in Computer Science

## Experience

**Software Engineering Intern — Hewlett Packard Enterprise, Bengaluru, India** 2022 – 2023

- Developed and maintained backend services and RESTful APIs supporting internal enterprise applications.
- Implemented API endpoints for authentication, diagnostics, and data retrieval using structured request/response models.
- Debugged production issues and improved error handling to strengthen service stability and reliability.
- Integrated structured logging and basic monitoring to improve observability and speed up troubleshooting.
- Collaborated with senior engineers on code reviews, feature design discussions, and CI/CD deployment pipelines.
- Wrote unit and integration tests to ensure correctness, stability, and maintainability of backend components.
- Built and integrated the BUDHA Kubernetes conversational assistant to simplify access to cluster diagnostics, logs, and health status.
- Designed backend workflows enabling engineers to query Kubernetes resources without manual CLI interaction.

## Projects

**Construction Management System** *C++, MySQL, HTML/CSS, Bootstrap*

- Designed and implemented a full-stack, database-driven application to automate construction site and project management workflows.
- Developed a responsive frontend to manage client records, site details, schedules, and work progress.
- Designed relational MySQL schemas and implemented secure CRUD operations with validation.
- Added reporting and search features to improve project tracking and day-to-day coordination.

**Two-Way Sign Language Interpreter** *Python, OpenCV, PyTorch, MediaPipe, OpenCL*

- Developed a real-time sign language recognition pipeline using CNN-based deep learning models and MediaPipe feature extraction.
- Performed data preprocessing including normalization, denoising, resizing, and feature extraction to improve consistency.
- Leveraged GPU acceleration with OpenCL to support real-time camera-based interaction and smoother inference.
- Built a simple interface for live capture and prediction display, enabling user feedback and iterative testing.

## Technical Skills

**Languages:** Python, Java, C, C++, SQL
**Backend/Frameworks:** Flask, REST APIs
**Cloud/DevOps:** Docker, Kubernetes, AWS (Basics), CI/CD concepts
**Databases:** MySQL, SQL fundamentals (schema design, indexing basics)
**Concepts:** Backend development, distributed systems, algorithms & data structures

## Coursework & Research

**Coursework:** REST APIs with Flask (Coursera), AWS Cloud Technical Essentials, Java Programming (MIT OpenCourseWare), REST APIs
**Research:** Leader election algorithms for crash-recovery distributed systems, focusing on stability and lightweight recovery.