

Dhruva Aher

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PROJECTS

Aura – Distributed Task Orchestration Platform

[\(link\)](#) | aurasys.vercel.app

Node.js, PostgreSQL, Redis, Docker

- Engineered a distributed job scheduling system in Node.js handling 20,000+ concurrent tasks with priority queues, worker crash detection, and automatic job recovery, sustaining 300 jobs/min under peak load while maintaining a 6.5-second P95 scheduling latency.
- Implemented safe job leasing with Redis to prevent duplicate execution across workers, ensuring fault tolerance across distributed workers; added retry logic with exponential backoff and heartbeat-based crash detection.
- Wrote **250 unit tests** covering concurrency failures and edge cases; validated crash recovery restoring 6,000+ jobs in under 2 seconds after complete data loss.

RedisLite – Redis-Compatible Key-Value Store

[\(link\)](#)

Go, TCP, RESP Protocol, Concurrent Systems

- Built a Redis-compatible key-value store in Go implementing the RESP wire protocol over raw TCP, enabling standard Redis clients to connect without modification; supported strings, hashes, lists, TTL-based expiration, and append-only-file (AOF) persistence.
- Engineered concurrent request handling with goroutines and sync.RWMutex; developed a configurable load-testing tool and benchmarked the system at 75K+ operations/sec with sub-millisecond P95 latency across concurrent TCP clients.

JusticeQueue – AI Legal Triage Platform

[\(link\)](#) | justicequeuelive.vercel.app

Next.js 14, GCP Vertex AI, MongoDB Atlas, Gemini API, Upstash Redis, Firebase

- Built an AI legal triage platform that orchestrates Gemini models, Atlas Vector Search, and retrieval pipelines to analyze legal documents and generate evidence-backed recommendations.
- Integrated Firebase Auth, OAuth 2.0, Cloud Logging, and Cloud Monitoring; deployed on Vercel with Upstash Redis rate limiting and 7 custom metrics tracking decision quality per docket run.

PRBeliefs – Automated Code Review Tool

[\(link\)](#)

Python, Redis, SQLite, Docker, GitHub Actions

- Built an automated code review tool that dispatches parallel review workers via a Redis-backed async queue; outputs structured, ranked feedback directly on GitHub pull requests with per-installation rate limiting.
- Designed a webhook ingestion pipeline decoupled from review processing using async queues; deployed with Docker Compose and GitHub Actions CI with automated testing on every push.

EXPERIENCE

ACM at ASU – Coordinator, Administration

Tempe, AZ | March 2026 – Present

- Coordinated GlobeHacks 2026 (ACM x GCN) end-to-end; managed Devpost configuration, real-time Discord announcements, and participant support for 250+ attendees across technical and non-technical tracks including a Google-hosted workshop session.
- Manage ACM's Discord community of 250+ members; facilitate recurring technical workshops and speaker sessions on AI, distributed systems, and industry topics attended by 30–40 students per session.

EDUCATION

Arizona State University, Grand Challenges Scholars Program

Tempe, AZ | Aug 2025 – Dec 2028

Bachelor of Science in Computer Science

GPA: 4.0/4.0

Coursework: Data Structures & Algorithms, Object-Oriented Programming & Data Structures, Digital Design Fundamentals, Discrete Mathematics, Calculus for Engineers II

Honors: Dean's List (Fall 2025, Spring 2026)

TECHNICAL SKILLS

Languages: Python, Go, Java, JavaScript, TypeScript, SQL, Bash

Frontend: React, Next.js, HTML5, CSS, TanStack Query, Zustand, Vite

Backend: Node.js, FastAPI, Flask, REST APIs, JWT Authentication, RBAC, SQLAlchemy, Alembic

Databases & Systems: PostgreSQL, Redis, MongoDB, TCP/IP, Concurrent Systems, WebSockets, Distributed Systems, Linux, Git

Cloud & DevOps: AWS, GCP, Docker, Terraform, GitHub Actions, CI/CD

Certifications: [AWS Cloud Practitioner](#) | [Microsoft Azure AI Essentials Professional](#)