

Raghav Khandelwal

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EDUCATION

Washington State University

Master of Science in Computer Science

December 2025

Cumulative GPA: 3.78/4.0

EXPERIENCE

Software Developer, Community Dreams Foundation – Pullman, WA

March 2026 – Present

- Eliminated **10+ hours/week** of manual donor-record exports by architecting a **TypeScript/Express REST API** with **JWT-based role-based access control (RBAC)**, enforced through layered **middleware** guards, delivering self-serve, audit-logged data access across all permission tiers
- Automated recurring payment processing and email campaign triggers across 3 client-facing workflows by integrating **Stripe** and **Mailchimp APIs** with **idempotent webhook handling** into the donor management backend, supporting **1,000+** monthly transactions
- Cut client-facing wait times by **70%** by engineering an asynchronous background job system with **Redis** and **Bull** message queues, decoupling report generation and email dispatch from the request-response cycle
- Reduced production regressions by **35%** by establishing an automated testing and **CI/CD** pipeline using **Jest**, **Supertest**, and **GitHub Actions**, gating every merge on passing unit and integration tests

Associate Professional Software Engineer, DXC Technology – Hyderabad, India

June 2022 – November 2022

- Eliminated recurring integration failures between legacy and modern database environments by engineering a **Python/SQL ETL pipeline** that extracted, transformed, and loaded **6+ GB/month** from **DB2** into **PostgreSQL**
- Sustained **99.5% uptime** at **500+ requests/min** by developing **RESTful APIs** for insurance policy operations, publishing documented endpoint contracts consumed by downstream teams
- Cut environment setup time by **60%** and standardized deployments across dev, staging, and production by **containerizing 4+ enterprise applications** with **Docker** and provisioning compute (**EC2**) and storage (**S3**) on **Amazon Web Services (AWS)**
- Reduced query response latency by **81%** (4.2s → 800ms) by optimizing **SQL Server** and **DB2** performance through index tuning and join refactoring

PROJECTS

Greenlight — Go REST API, Go, PostgreSQL, net/http — [\[GitHub\]](#)

May 2026 – August 2026

- Prevented lost updates under concurrent writes by engineering a production-grade **Go REST API** on **PostgreSQL** with **optimistic concurrency control** via version-based conflict detection
- Protected endpoints from abuse and credential misuse by implementing **stateful token authentication** and per-client **rate limiting** middleware, with **graceful shutdown** and structured **JSON logging** for operational reliability
- Enabled efficient filtered, sorted, and paginated queries across large result sets by building full-text search over **GIN-indexed PostgreSQL** columns

Snowpack Prediction — AgAid Hackathon, Python, PyTorch, Flask, React

February 2025

- Achieved **87.8% accuracy** predicting Snow Water Equivalent across **9M+ spatio-temporal records** from 8 meteorological datasets by designing a **Transformer-based neural network** in **PyTorch**
- Delivered real-time predictions to end users by deploying a **Flask** and **React** service with live CSV ingestion and interactive SWE visualizations

Socketsmith — HTTP Server from Raw TCP, Go, TCP, HTTP/1.1 — [\[GitHub\]](#)

May 2026

- Built an **HTTP/1.1** server from raw **TCP** sockets in **Go**, implementing a **state-machine parser** for request lines, headers, and Content-Length-delimited bodies to process HTTP requests without relying on Go's net/http abstractions
- Engineered concurrent **TCP** connection handling using **goroutines** and net.Listener, supporting independent client connections with graceful shutdown via atomic state tracking and SIGINT/SIGTERM signal handling
- Developed protocol-level HTTP header and response serialization with validation, case-insensitive header storage, status-line generation, and ordered writes for 200, 400, and 500 status codes

SKILLS

Languages: Go, Python, TypeScript, JavaScript, C/C++, SQL

Backend & APIs: Node.js, Express.js, Flask, REST APIs, JWT, RBAC, Rate Limiting, Message Queues (Bull)

Databases & Cloud: PostgreSQL, Redis, DB2, AWS (EC2, RDS, S3), Docker

Testing & DevOps: Jest, Supertest, PyTest, GitHub Actions, Git, Linux

AI/ML & Frontend: PyTorch, OpenAI API, RAG, Vector Embeddings, React, Next.js