

Amodh Dhakal

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EDUCATION

Cumberland University

Master of Science in Information Technology; GPA: 4.0/4.0

Lebanon, TN

August 2027

North Carolina State University

Bachelor of Science in Computer Science; GPA: 3.9/4.0

Raleigh, NC

May 2025

TECHNICAL SKILLS

Languages: Javascript, Typescript, Java, Python, C#, SQL

Frameworks: React.js, Spring Boot, ASP.NET Core, Node.js, Next.js, Vue.js, Flask

Tools & Infrastructure: Docker, AWS (EC2), Azure (App Service, SQL), Redis, GitHub Actions, Nginx

WORK EXPERIENCE

Software Developer Intern | Caduceus

Remote

Tech: Javascript, Babylon.js, Vue.js, Capacitor, Vitest

Jan 2025 - Apr 2025

- Collaborated with 3-person Agile development team to build mobile hospital simulation game (iOS/Android via Capacitor) designed to train medical students in patient diagnosis and clinical decision-making
- Improved 3D rendering performance **3.5x (17 FPS to 60+ FPS)** through draco mesh compression and texture optimization, enabling smooth gameplay on mid-range student smartphones
- Owned event-driven patient simulation handling deterministic user actions (medication orders, lab requests) and probabilistic patient deterioration/recovery, creating realistic challenges across **50+ clinical scenarios**
- Designed mobile EHR interface for ordering labs/imaging, prescribing medications, and documenting clinical assessments, replicating real hospital workflows within touch-optimized game interface

PROJECTS

QuadroPE

Tech: Python, Flask, PostgreSQL, Redis, Docker, Nginx, Prometheus, Grafana, Pytest

- Optimized system throughput **24x (10 to 240+ reqs/sec)** through database connection pooling and two-tier LRU caching (in-memory app + Redis), supporting **50,000+ shortened URLs** without performance degradation
- Reduced **p95 latency 50x (11s to 220ms)** on read-heavy APIs eliminating **95% database queries** with caching
- Deployed **6 load-balanced instances** behind Nginx, sustained **zero errors** under **500+ concurrent users**
- Built observability dashboard (Prometheus metrics, Grafana visualizations, Discord alerting) enabling **sub-5-minute incident response** for server crashes and app performance monitoring

BrewLogic

Tech: Java, Spring Boot, React, Bootstrap, Redis, MySQL, Docker, AWS, JUnit

- Led 6-person team building coffee shop app, coordinating frontend/backend, establishing code review processes
- Built role-gated views in React, Bootstrap, React Router with distinct customer (menu browsing, cart management), staff (order queue, fulfillment tracking), admin (inventory dashboard, analytics)
- Scaled backend to handle **1,000+ reqs/sec** on AWS EC2 through Redis caching and query index optimizations

Medilin (3rd Place, SolHacks)

Tech: Typescript, React, Next, Vercel, TailwindCSS, ElevenLabs, WebSockets, Gemini AI

- Led 4-person team to 3rd in SolHacks, shipping multi-lingual appointment booking platform to Vercel
- Managed WebSocket streaming real-time bidirectional audio between ElevenLabs voice agent and hospital phones
- Improved Gemini translation **reliability 56% (to 99%)** with jittered exponential backoff for rate limit handling

Policy Manager

Tech: C#, ASP.NET, MSSQL, Entity Framework, Azure

- Independently deployed policyholder management API to Azure using App Service and SQL handling CRUD operations and claims processing for **10,000+ simulated customer records** with **zero data loss**
- Improved **sustained throughput 2.6x (5,200 to 13,500+ reqs/sec)** through caching, database query indexing
- Achieved **97%+ code coverage** with automated GitHub Actions CI/CD pipeline, catching bugs before deployment through comprehensive controller and service layer testing