

SARATCHANDRA PATNAIK

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LinkedIn

website

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Bellevue, WA

EDUCATION

Arizona State University

Master of Science in Computer Science (GPA: 3.80/4)

Tempe, AZ

Dec 2025

Christ University School of Engineering

Bachelor of Technology in Computer Science (GPA: 9.11/10)

Bengaluru, India

May 2022

TECHNICAL SKILLS

Programming & Development: Python, Java, Kotlin, Go, JavaScript, TypeScript, C, C++, React, FastAPI, Flask, Node.js, Express.js, Django, REST APIs, Microservices, PostgreSQL, MySQL, MongoDB, DynamoDB, Redis, ChromaDB, SQLite
AI, Cloud & Tools: LLMs, RAG, Prompt Engineering, Agentic Workflows, Cursor, Claude Code, Computer Vision, PyTorch, AWS (EKS, Lambda, S3, SQS, SNS), Docker, Kubernetes, Terraform, ArgoCD, GitOps, GitHub, Jenkins, Jira, Grafana, Linux

PROFESSIONAL EXPERIENCE

Graduate Research Assistant

Arizona State University [Software Testing, Research, Academic Writing]

Tempe, AZ

Jan 2026 – Present

- Support graduate research on **GenAI in software verification, validation, and testing** by synthesizing technical literature, drafting manuscripts, and refining academic materials into publication-ready and **classroom-ready deliverables**.

Software Engineer

Amagi Media Labs [AWS EKS, ArgoCD, FastAPI, LLMs]

Bengaluru, India

Aug 2022 – Nov 2023

- Reduced media processing latency by **93.75%(8 minutes → 30 seconds)** by rewriting the frame and metadata pipeline as an async **Python/FastAPI** service with CV model integration.
- Built an **LLM-powered log analysis service** that parsed raw server logs and surfaced root causes automatically, cutting manual debugging time by **60%**.
- Increased deployment frequency by **30%** across **15+ microservices** by migrating to **ArgoCD GitOps** on **AWS EKS**, maintaining **99.9%** rollout stability.
- Hardened the Kubernetes platform with **Network Policies** for microservice isolation and **Terraform**-based IP whitelisting for network perimeter security.
- Led the first production rollout of native **speech-to-text captioning services** (Capsequo, Akashvani), owning provisioning, feature flags, validation, and team enablement.
- Resolved a peak-hour **live broadcast outage in 40 minutes** by diagnosing primary-feed audio silence and coordinating a controlled failover to the healthy secondary stream.

Software Intern

Blueplanet Solutions Inc. [MySQL, Web Development]

India

Apr 2021 – Jun 2021

- Designed and shipped a **multi-attribute search feature** for the Campus Clubs platform, enabling administrators to filter and retrieve profiles across **6,000+ students** by name, club, year, and department through a **PHP/AJAX** web interface.
- Improved search responsiveness for production users by rewriting slow queries as **MySQL stored procedures** with composite indexes and server-side pagination, reducing redundant full-table scans on large profile datasets.

PROJECTS

Multi-Tenant Event Management Platform

React 18, TypeScript, NestJS, PostgreSQL, TypeORM, JWT, Vite

2025

[Source Code](#)

- Built a **multi-tenant event management platform** with a **React 18 + TypeScript** frontend and **NestJS** backend exposing **61 REST endpoints** across 10 feature modules, with **JWT auth**, role-based access guards, and org-scoped data isolation enforced at the service layer.
- Implemented **pessimistic row-locking** for concurrent resource allocation, a **ledger-based inventory system** backed by a custom **PostgreSQL function** for projected balance queries, and a **recursive CTE** for parent-child event hierarchy violation detection.

Deep Research Agent

Python, n8n, ChromaDB, SQLite, OpenAI, Hierarchical Memory

Oct 2025 – Nov 2025

[Source Code](#)

- Built an **agentic research system** using **n8n** orchestration that autonomously decomposes a query into sub-tasks, retrieves relevant documents, and synthesizes structured research outputs.
- Designed a **three-tier hierarchical memory** LLM context window for working memory, **SQLite** for episodic research logs, and **ChromaDB** for long-term vector retrieval to manage context limits across multi-step sessions.

My Personal Agent – Multimodal RAG System

React, Python, FastAPI, OpenAI GPT-4 Vision, ChromaDB, SQLite, Cursor, Claude Code

Nov 2025 – Dec 2025

[Source Code](#)

- Built a **multimodal RAG pipeline** using **ChromaDB**, custom chunking/embedding workflows, and **GPT-4 Vision** to support semantic retrieval across both image and text inputs.
- Shipped a production-style **React + FastAPI** full-stack application with end-to-end workflows for **ATS resume analysis** and **vehicle diagnostics** powered by the RAG backend.