

# Anup Sedhain

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## Experience

- Software Engineering Intern**, Airvet Inc. – Los Angeles, CA May 2025 – Present
- Architected AI-driven development automation using Model Context Protocol (MCP) to streamline regression testing workflows, reducing QA time by 80% and accelerating feature-to-release cycles from 4 weeks to 2 weeks
  - Researched potential veterinary AI assistance workflow utilizing RAG architecture with Langchain and vector databases for real-time decision support
  - Engineered end-to-end automated development pipeline integrating JIRA, Figma, and GitHub with MCP agents, enabling automated releases while maintaining 99.9% deployment success rate
- Graduate Research Assistant**, University of Florida – Gainesville, FL Jan 2025 – Jun 2025
- Developed social media analysis system processing 2M+ BlueSky events using BERT neural networks, K-means clustering, and TF-IDF scoring to achieve 92% AI content detection accuracy
  - Implemented temporal social network analysis using NetworkX and PageRank algorithms to track attitude evolution and influence patterns across 45-60 minute processing pipeline, generating publication-ready research insights for computational social science
- Software Engineer**, Airvet Inc. – Los Angeles, CA May 2021 – Jul 2024
- Architected Care Portal with Next.js and Golang enabling vet-techs to handle 100+ concurrent cases through real-time chat and video, accelerating response times by 75%
  - Optimized real-time system performance using Server-Sent Events and WebSocket streaming with Redis caching, supporting 15+ concurrent cases with sub-200ms latency and 99.9% uptime
  - Built analytics ecosystem with Firebase Analytics, Amplitude, and LogRocket, providing insights across 10,000+ vet-tech sessions and continually iterating on the product, resulting in almost 100% client retention
- Software Engineer, Freelance**, Polydelic AS – Oslo, Norway Aug 2020 – Jun 2021
- Delivered 6+ production SaaS platforms using React, Node.js, and AWS securing millions in funding, serving 50,000+ users with 99.9% uptime
  - Engineered enterprise video streaming platform (Ultify) with Docker containerization supporting 10,000+ concurrent users, generating €2M+ ARR and reducing latency by 60%
  - Launched artist booking marketplace (Rubato) utilizing Elasticsearch and automated contract processing with GraphQL APIs, facilitating €100K+ monthly transactions
- Software Engineer**, Leapfrog Technology Inc. – Kathmandu, Nepal Jul 2019 – Dec 2020
- Spearheaded enterprise project management platform development using Firebase and LitElement with automated workflows, accelerating delivery timelines by 40% for 50+ projects
  - Helped build bio-informatics application managing protein workflows with MySQL database and Micronaut, supporting 200+ batches monthly and improving processing efficiency by 25%

## Education

- University of Florida**, Master of Science in Computer Science, GPA 4.0 Aug 2024 – Dec 2025
- Kathmandu University**, Bachelor of Computer Engineering, GPA 3.63 Sep 2015 – Jul 2019

## Technical Skills

**AI/ML:** MCPs, RAG, Langchain, Vector Databases, Hugging Face, Ollama, TGNNs, ML Pipelines  
**Programming:** Python, TypeScript, JavaScript, Go, C++ , Node.js, Java, Rust, OpenMP, MPI  
**Frontend:** React, Next.js, Redux, Tailwind CSS, WebRTC, WASM, Real-time Systems  
**Backend & Data:** PostgreSQL, MongoDB, Redis, Firebase, Elasticsearch, Spring Boot, RESTful APIs, GraphQL  
**Cloud & DevOps:** AWS, GCP, Docker, Kubernetes, GitHub Actions, CI/CD, Kafka