

Basanta Rai

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Summary

A software developer with nearly two years of experience, specializing in backend development. Experienced in designing **REST APIs**, **microservices**, and **RAG-based** solutions. A proactive learner, passionate about **databases**, **system design/architecture**, and **Linux**, always striving to build efficient and scalable systems.

Experience

Associate Software Engineer, AMNIL Technologies Pvt. Ltd., Nepal May 2023 – Present

- Developed a **middleware microservice** that acts as a **webhook broker**, efficiently **handling, routing, and monitoring webhooks in real-time** to eliminate continuous polling and ensure seamless integration between multiple services
- Collaborated with cross-functional teams, particularly **AI Engineers**, in the development of an **in-house generative AI application**
- Involved in developing **REST APIs** and designing an **efficient database architecture** to **manage 3D model assets and related metadata**, ensuring scalability and optimal performance
- Integrated **BullMQ** for **task queuing** in a **generative AI** application, optimizing background processing by **offloading ingestion requests** and efficiently managing them in the queue
- Developed REST APIs for **custom file** explorer to streamline **file navigation and management**, built on top of **AWS S3** to simplify document access and ingestion for a RAG application
- Played a significant role in developing a **RAG-based Generative AI application** using **OpenAI**, **LangChain (JavaScript)**, and **ChromaDB**, enabling **real-time content streaming** for continuous user query responses
- Customized **Botpress** to develop **chatbots tailored to specific client requirements and project goals**

Education

Bachelor of Science in Computer Science and Information Technology [TU] 2019 - 2024

Prime College, Kathmandu

Projects

panoramer - Panoramic Image Stitching Web Application View in GitHub

- A final year project designed to **simulate panorama generation** by stitching multiple images taken from the same point. It utilizes **SIFT**, **RANSAC**, and **Levenberg-Marquardt** algorithms for precise image alignment and blending, ensuring seamless and high-quality results.
- **Tools Used:** Python, Flask, openCV, ReactJS, Tailwind CSS

Prime IT Club Website View in GitHub

- The official website of **Prime IT Club**, built as a CMS-driven platform to streamline the management of blog posts, events, and members. It provides an intuitive interface for administrators to create, edit, and publish content efficiently.
- **Role:** Led the development, collaborating with other contributors to ensure a scalable and maintainable system
- **Tools Used:** Laravel, Tailwind CSS, Alpine.js, MySQL

Technologies

Programming Languages: JavaScript, Typescript, Go, PHP, Bash, Lua

Libraries/Frameworks: Node.js, Express.js, NestJS, Langchain, React, Alpine.js, Laravel

Databases: MySQL, PostgreSQL, SQLite, Redis, ChromaDB

Tools/Technologies/Platforms: Linux, Vi/Vim/Neovim, Tmux, Docker, Git, GitHub, GitHub Actions, GitLab, Jenkins, Portainer, REST API, OpenAI, RabbitMQ, AWS S3

Activities

- **Executive Member, Prime IT Club:** Led event management, organizing tech workshops, seminars, and community initiatives.