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.

  – **Technologies 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. 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
  – **Technologies Used**: Laravel, Tailwind CSS, Alpine.Js, MySQL

Technologies

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

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, GithHub Actions, GitLab, Jenkins, Portainer, REST API, OpenAI, RabbitMQ, AWS S3, Web Sockets, SSE