

Basanta Rai

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Summary

Software Developer with more than three years of experience, specializing in building scalable APIs, real-time data pipelines and data-intensive applications. Experienced in designing REST APIs, GraphQL, microservices, and RAG-based AI integration. Passionate about computers, programming, databases & systems.

Experience

Developer, EB Pearls, Nepal

Aug 2025 – Present

- Developed an ERP calendar module supporting leave management, custom events, and recurring events
- Designed and implemented a data migration strategy to transition legacy data from MSSQL to PostgreSQL, including schema mapping, data transformation, validation, and integrity checks
- Decoupled data import and export workflows using Microsoft Azure Service Bus, enabling asynchronous processing for long-running operations
- Integrated OpenAI vision models into backend media analysis pipelines, enabling automated image processing workflows
- Developed APIs supporting native mobile subscription and paywall functionality for mobile applications
- Designed and developed scalable GraphQL APIs for web and mobile applications

Associate Software Engineer, AMNIL Technologies Pvt. Ltd., Nepal

May 2023 – Aug 2025

- Built an in-house webhook broker and monitoring service that replaced polling across 5+ internal projects, enabling centralized real-time event delivery and improving system observability
- Implemented domain and URL-based inclusion filters for AI-powered web queries, providing greater control over external search context
- Designed and developed RAG-based chat applications using OpenAI, LangChain, and ChromaDB, integrating LLMs into backend workflows
- Developed a custom file management system on top of AWS S3, providing secure document access and streamlined document ingestion for AI workflows
- Integrated BullMQ and Redis for asynchronous background job processing, offloading resource-intensive workloads and improving application responsiveness and throughput
- Engineered scalable REST APIs and relational schemas for complex 3D model and metadata workflows in digital construction systems
- Built dynamic CMS modules for banking and telecommunications clients, enabling flexible chatbot layouts, content management, and intent-driven interactions

Education

Bachelor of Science in Computer Science and Information Technology

2019 - 2024

Prime College, Kathmandu

Projects

• **ga-lang - A devanagari based experimental toy programming language**

[View in GitHub](#)

An experimental, tree-walked interpreted toy programming language that uses devanagari script, developed as part of my exploration of compilers and interpreters. It is still work in progress.

– **Technologies Used:** Typescript

• **panoramer - Panoramic image stitching visualization web application**

[View in GitHub](#)

A web application for simulating and visualizing panorama image generation using computer vision algorithms such as SIFT for feature detection, RANSAC for outlier rejection, and Levenberg–Marquardt for optimization. Enables step-by-step visualization of the stitching pipeline, including feature matching, homography estimation, and image stitching, illustrating how multiple images are aligned and combined into a panorama.

– **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: PostgreSQL, MySQL, MongoDB, SQLite, Redis, ChromaDB, Weaviate

Infrastructure & Others: Linux, Vi/Vim/Neovim, Tmux, Docker, Git, Jenkins, Portainer, REST API, GraphQL, Open API, OpenAI, RabbitMQ, Grafana, Prometheus, Elasticsearch, AWS, Microsoft Azure, Web Sockets, SSE