Nishan Pokharel

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Full-Stack Software Engineer with hands-on experience in developing scalable web applications using **Node.js, Express.js, Nest.js, Koa, React.js,** and **API-driven architectures (REST, GraphQL, gRPC)**. Skilled in monorepo-based **microservices** environments with **Nx**, database management with **PostgreSQL** and **MongoDB**, and cloud integration with **AWS**.

EDUCATION

BSc (Hons) Computing — **2022-2025**
Islington College, London Metropolitan University — Kamalpokhari, Kathmandu

A-Levels — **2019-2021**
British Model College, Cambridge University — Thapathali, Kathmandu

WORK EXPERIENCE

SOFTWARE ENGINEER — November 2024 - Present
Innovate Tech — Baluwatar, Kathmandu

- Engineered full-stack features for the **MySecondTeacher** platform using **React** for the frontend**, Node.js** with **Express** and **Koa** for the backend, integrating **GraphQL** for efficient frontend-backend communication, and **REST APIs** to enable smooth operation across various modules.
- Architected and maintained scalable backend services in a **monorepo** managed by **Nx**, using **Node.js**, **TypeScript**, and **Koa**, integrating **API Gateway** and **Saga Orchestration Pattern** for service logic and **gRPC** for **microservice communication** to support modular, efficient operations.
- Implemented bulk import/export functionality to process over 1,000 exam questions from Excel sheets asynchronously, utilizing **BullMQ** for task queuing.
- Led the **migration of four critical projects** from React 16/17 to React 19, upgrading React Router DOM to v7 and Material UI from v4 to v7 to ensure cross-project compatibility, modernize dependencies, and prevent potential future issues.
- Developed the frontend for a **nested bucket management system** to organize exam and test questions using React, GraphQL, Material UI, and Bootstrap, enabling the creation, updating, deletion, movement, and duplication of hierarchical buckets for efficient content management.
- Collaborated with cross-functional teams via **GitLab for version control** and **package management**, contributing to **custom package creation and publication** while resolving frontend and backend issues to enhance code reusability and system stability.

NODE.JS INTERN — August 2024 - November 2024
Innovate Tech — Baluwatar, Kathmandu

- Developed an **HRM Asset Management system** (similar to Google Drive) using **Node.js, Express.js, and MongoDB**, implementing secure file uploads and nested folder creation with role-based access control via **JWT**, integrated with **AWS S3 and pre-signed URLs** for efficient storage and retrieval.
- Built the **HRM Wiki Service** backend with **TypeScript, TSOA, and PostgreSQL**, designing RESTful APIs and database schemas for content creation and versioning to support internal knowledge sharing.
- Contributed to microservices architecture by developing service endpoints with Node.js and TypeScript, ensuring seamless inter-service communication via REST APIs.
- Gained expertise in **microservices architecture**, cloud storage solutions, and scalable backend systems through hands-on contributions and collaboration across multiple teams.

BACKEND INTERN   February 2024 - August 2024
Rivia Infosys   Bagbazzar, Kathmandu

- Developed backend services for the **Edxplor** and **Hrxplor** platforms using **Node.js, Express.js, and Nest.js**, focusing on scalable RESTful APIs and TypeScript for type-safe, maintainable codebases.
- Designed and optimized **PostgreSQL** database schemas using **TypeORM**, implementing indexing and query optimization to enhance data retrieval for platform features.
- Integrated **Strapi** for content management and **Swagger** for API documentation, streamlining development workflows and ensuring clear API specifications.
- Utilized **Docker** to containerize services and **Wrike** for agile project management, enabling consistent deployments and timely feature delivery in a fast-paced environment.

TECHNICAL SKILLS

- **Programming Languages**: JavaScript, TypeScript, SQL, Python
- **Backend Technologies**: Node.js, Express.js, Nest.js, FastAPI, TSOA, WebSocket
- **Frontend Technologies**: React.js, Material UI, HTML, Vanilla CSS, Bootstrap, Tailwind CSS
- **Database Management System**: PostgreSQL, MongoDB, MySQL, Oracle SQL
- **Tools & Platforms**: Docker, Strapi, Swagger, Git, GitHub, GitLab, Trello, Wrike
- **API & Web Services**: RESTful APIs, GraphQL, gRPC
- **Operating Systems**: Windows, Linux, macOS
- **Methodologies**: Agile Development, Microservices Architecture, MVC Design Pattern

PERSONAL PROJECTS

OPEN-ML

Technologies used: React, Node.js, FastAPI, PostgreSQL, AWS S3, Tailwind CSS

- Developed a **no-code machine learning platform** for students, professionals, and non-professionals, which offers dataset uploads to AWS S3, preprocessing, feature engineering, training of classification and regression algorithms, model evaluation, testing, and visualization without coding expertise.
- Architected a secure microservices infrastructure with a Node.js backend for JWT-based user authentication and task routing, and a FastAPI backend for executing ML operations, including **training and evaluating 15+ machine learning models**.
- Deployed a scalable, production-ready infrastructure by hosting the frontend on **AWS S3 with CloudFront** for fast global content delivery, and both Node.js and FastAPI backends on **EC2 instances**, which enabled secure, and cost-effective solution with seamless inter-service communication.

PERSONALIZED CHATBOT

Technologies used: TypeScript, Node.js, Langchain, Langgraph

- Enables users to upload documents to AWS S3, which are processed into a vector store using **MistralAI embeddings**, allowing the **RAG chatbot** to retrieve and answer queries based on the document content.
- Utilizes **LangGraph's** workflow with a checkpoint memory system to maintain conversation threads via unique threadIds, ensuring **context-aware responses** across multiple user interactions.

SERVICE & AWARDS

- Board Member (Editor & IT officer), Rotaract Club of Rudramati-Babarmahal-Kathmandu, 2025 – 2026
- General Member, Rotaract Club of Rudramati-Babarmahal-Kathmandu, 2024 – 2025
- General Member, JCI Kakani, 2022 – 2023
- Volunteer, Food Donation and Awareness Campaign, COVID-19 Pandemic, 2021