

SUMALY BAJRACHARYA

Backend Engineer

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SUMMARY

Software engineer with 2+ years of experience in full-stack development, building production-ready web applications using Node.js, NestJS, React, MongoDB, GraphQL, and TypeScript. Experience with monorepo-based architectures, microservices, database design, building scalable APIs, integrating LLMs, and developing responsive frontends in Agile teams.

SKILLS

- **Languages:** JavaScript, TypeScript, Python, SQL, C++, C.
- **Backend & Database:** Node.js, NestJS, Express.js, JWT, REST APIs, FastAPI, GraphQL, MongoDB, PostgreSQL.
- **Frontend:** React, Redux.
- **Cloud & DevOps:** AWS (S3, SES), Twilio (OTP/SMS), SendGrid, Docker, Git, Bitbucket, Github Actions, CI/CD.
- **Tools & Methodology:** Postman, Swagger, Apollo Studio, Jira, Agile/Scrum.
- **AI:** Retrieval-Augmented Generation (RAG), Large Language Models (LLMs), Feature Engineering, Claude Code.

WORK EXPERIENCE

Software Engineer (Full-stack)

EB Pearls Pvt. Ltd.

Nov 2022 – Jul 2024
Sydney, Australia (remote)

- Delivered 3 production-ready full-stack web applications by designing RESTful and GraphQL APIs with 15% reduced load times, making key architectural decisions on data modeling and API structure, and creating responsive React frontends.
- Optimized application performance by 25% using database indexing, aggregation pipelines, and query optimizations.
- Built 12+ reusable React components and Redux-based state management to ensure UI consistency and responsiveness across multiple features and reduce code duplication.
- Secured user access and automated communications by integrating Twilio OTP, SendGrid, and AWS SES for email/SMS workflows and AWS S3 for image storage, reducing unauthorized login attempts.
- Implemented role-based access control (RBAC) across 4 user roles and authentication workflows for a SaaS-based health management application to ensure data privacy and secure access division across various user levels.
- Improved code maintainability within a monorepo architecture by enforcing TypeScript and implemented centralized exception and error handling using GraphQL modules.
- Presented biweekly project demos and technical progress reports to stakeholders in Scrum ceremonies, communicating feature updates and development timelines, and contributed to 2-4 peer code reviews weekly to maintain code quality.

Software Engineer Trainee

EB Pearls Pvt. Ltd.

Apr 2022 – Oct 2022
Sydney, Australia (remote)

- Built a vehicle auction processing system using node-cron scheduled jobs to process bids and close auctions at scheduled times, with Mongoose geo-spatial queries to list vehicles by location for a vehicle auction marketplace, enabling the core revenue-generating feature.
- Designed and delivered responsive web applications and admin dashboards using MERN stack and NestJS with GraphQL to monitor listings and manage user accounts, following Agile methodologies.
- Utilized Postman, Swagger, and Apollo Studio for API development, testing, documentation, and querying.

ACADEMIC PROJECTS

E-Commerce Analysis: Product Success and Price Prediction

Aug 2025 – Dec 2025

- Built a prediction system using Random Forest, XGBoost, and LightGBM, achieving 82.98% classification accuracy (F1: 0.83) and strong regression performance (RMSE: 0.4556, R²: 0.5972).
- Integrated FAISS, BM25, and hybrid retrieval for a RAG-based price prediction system enabling SHAP-based explainability.

Protein Chatbot with FAISS index and LLM integration

Aug 2025 – Dec 2025

- Leveraged Sentence Transformer (all-MiniLM-L6-v2) to build an AI-powered full-stack RAG-based web application for querying protein information, with a FAISS IndexFlatL2 for efficient semantic similarity search.
- Used Llama3.2:1b (via Ollama) to produce semantically accurate answers and containerized the application using Docker.

PUBLICATION

Uncertainty-Aware LLM-Guided Policy Shaping for Sparse-Reward Reinforcement Learning

Accepted - IEEE Conference on Artificial Intelligence (CAI) 2026

LEADERSHIP & AWARDS

Ignite Hackathon - 2nd Place Winner (2026): Built *PlanMyPlate*, an AI-powered meal-planning system, with adaptive multi-agent workflows, using the Claude API, FastAPI, React, and TypeScript.

Entrepreneurial Lead, NSF I-Corps (2025): Led 3-member teams in two cohorts and conducted 40+ customer discovery interviews to apply lean startup principles and ecosystem modeling for AI-driven tools in music and legal domains.

EDUCATION

Master of Science in Computer Science

University of South Dakota — GPA: 4.0/4.0

Aug 2024 – May 2026
South Dakota, USA