

ANUP SHRESTHAnn

Senior Software Engineer

Kathmandu, Nepal | anupstha@gmail.com •

SUMMARY

Senior Fullstack Engineer with experience building high-scale web platforms, scalable frontend architectures, and production-ready backend systems across AI platforms, fintech/cooperative systems, healthcare dashboards, and pharmaceutical workflows. Strong background in design systems, UI standardization, and cloud-enabled deployment workflows using modern AWS services, Docker, and Kubernetes.

CORE SKILLS

Frontend: React, Next.js, TypeScript, JavaScript, Tailwind CSS, Material UI **Backend:** Golang, Node.js, NestJS, REST APIs, GraphQL, gRPC **Databases:** PostgreSQL, MongoDB, Redis, Neo4j **Cloud & DevOps:** AWS (EC2, S3, RDS, ECS, Batch, Lambda, API Gateway), AWS CDK, Docker, Kubernetes **Observability & Messaging:** Prometheus, Grafana, WebSockets, Matrix (matrix.org) **Design & UI Systems:** Design Systems, Storybook, Figma, Adobe XD **Background Jobs & Workflows:** BullMQ, Faktory,

PROFESSIONAL EXPERIENCE

DVLP MEDICINES (WHITEHAT ENGINEERING) Senior Software

San Francisco, California, United States Dec

DVLP (Drug Development Platform) is a platform focused on supporting pharmaceutical workflows by generating structured proposals and drug documents using synthesized insights from structured and unstructured data. It includes scalable fullstack features, a reusable design system, real-time collaboration (chat/channels), and cloud infrastructure to support background processing and long-running compute workloads.

- Migrated the complete frontend architecture from Material UI to Tailwind CSS, maintaining full test coverage.
- Created a full DVLP Design System including reusable components, layout patterns, and standardized UI behavior for consistent development and faster iteration.
- Overhauled the entire UI & UX of DVLP, redesigning key flows to improve usability, clarity, and speed for internal and external users.
- Implemented structured + unstructured data synthesis logic to generate better insights and drug development proposal outputs.
- Built agentic document generation workflows, enabling automated drafting pipelines and intelligent proposal building.
- Implemented real-time collaboration features (chats, channels, messaging patterns) using Matrix (matrix.org) for scalable internal communication.
- Designed cloud infrastructure using AWS CDK, enabling reproducible deployments, environment consistency, and scalable provisioning.

- Implemented background and long-running compute workflows using AWS ECS + AWS Batch, improving scalability for heavy workloads and async processing.
- Delivered production reliability using Docker, modern CI workflows, and AWS services like S3 + RDS, improving performance and maintainability.

Tech Stack: Golang, Next.js, React, NestJS, Python, PostgreSQL, Neo4j, AWS (S3/RDS/ECS/Batch), AWS CDK, Material UI, Factory, Mercure, Langsmith, Docker

LEARN PROMPTING

San Francisco, California, United States

Lead Engineer

Dec 2024–Dec 2025

Enterprise eLearning Platform | World's Largest AI Red-Teaming Competition (\$100K in prizes)

- Architected and developed HackAPrompt 2.0, a high-scale competition platform using Next.js and Supabase, supporting thousands of global participants.
- Designed and implemented a robust scoring algorithm for dynamic and fair evaluation of red-teaming challenges.
- Engineered interactive AI challenges leveraging advanced LLMs, agent workflows, and tool-calling mechanisms.
- Built core platform features including team formation, challenge management, leaderboards, and real-time progress tracking.

Tech Stack: Next.js, Supabase, Websockets, React, TypeScript, JavaScript, Tailwind CSS, CSS3, HTML5, Storybook, Webpack, ESLint, Prettier, Git

WHITEHAT ENGINEERING

Redmond, Washington, United States

Senior Software Engineer

Dec 2023–Present

Developed interactive 3D game elements for End The Rig, launched on Android and iOS. Enhanced End The Rig Web with a robust UI, payment integration, and task optimization. Built data pipelines for the Drug Development Platform to streamline pharmaceutical data analysis.

Selected Project Experience

- ACT 3 AI
 - Designed and implemented an automated pipeline to generate Blender videos using YAML-based patterns derived from user-provided data.
 - Successfully integrated full-body motion capture and audio-driven lip-sync for 3D characters within Blender.
 - Built a distributed master-slave job execution system using Temporal, leveraging on-premises PCs as compute nodes.

Tech Stack: Blender, Blender Scripting using Python, C++, ComfyUI, ffmpeg, Python, Fast API, Nvidia Omniverse, Unreal Engine.

- End The Rig Game:
 - Spearheaded the development of interactive game elements and 3D assets using Unreal Engine and Blender, enhancing the game's visual and functional aspects.
 - Successfully integrated Android and iOS SDKs, enabling the game to be ported to both platforms.
 - Managed the deployment process, resulting in successful launches on the Google Play Store and the Apple App Store.
 - Successfully developed the flow of generating videos using Blender and Python and implemented lipsync for characters in the video.

Tech Stack: Unreal Engine, Blender,, Python, C++, Android SDK, iOS SDK, OpenGL, Vulkan, WebGL, Git,Docker, AWS (S3, EC2), FFmpeg

- End The Rig Web:
 - Leveraged React, Next.js, Material-UI, and Nest.js to develop and enhance the web application's user interface and backend functionality.
 - Designed a robust system for creating and managing IFTTT conditions and checks, improving the game's logic and user interaction.
 - Standardized the web app's UI across all pages, removed redundant code, and integrated Stripe for secure payment processing.
 - Implemented BullMQ for task scheduling to streamline operations and enhance performance.

Tech Stack: React, Next.js, Material-UI, Nest.js, TypeScript, JavaScript, Node.js, Stripe API, BullMQ, Redis, PostgreSQL, Webpack, Vite, ESLint, Prettier, Docker, AWS (Lambda, API Gateway), Jest.

RARA LABS PVT LTD

Senior Software Engineer

Senior Software Engineer

Lalitpur, Nepal

Aug 2022–Dec 2023

May 2021–Aug 2022

First hire on the development team of MYRA ERP, a cloud cooperative platform, built a Core Banking System in six months, designed a scalable UI component system, and implemented robust authentication, role-based access, and multi-tenant support.

Selected Project Experience

- Myra ERP:
 - Designed and developed a scalable frontend architecture with NX Monorepo for streamlined code management and growth.
 - Contributed to Core Banking, Accounting, Inventory, and Alternative Channels modules, ensuring seamless integration.
 - Built complex database queries and APIs for CRUD operations and detailed reporting.
 - Played a key role in DevOps, overseeing MYRA ERP's production deployment for a smooth rollout.
 - Completed first production release of MYRA ERP within 6 months of project start date with 26 cooperative organizations at launch.

Tech Stack: Golang, React, NX Monorepo, TypeScript, JavaScript, Node.js, Nest.js, PostgreSQL, MongoDB, TensorFlow, GraphQL, REST API, Webpack, Vite, ESLint, Prettier, Docker, Kubernetes, AWS (EC2, RDS, ECS), Jenkins, Redis, Jest, Cypress.

- Ledger Engine:
 - Contributed to the frontend development of the Ledger Engine's admin portal, enabling control over products, transactions, and process flows.
 - Converted GRPC calls to REST using an Envoy proxy and developed a tool to automate code generation for the frontend.
 - Implemented features for customization, such as no-code options for defining accounting rules, tariffs, and controls.
 - Enabled pay-per-use subscriptions for self-defined products tailored to business needs and integrated a built-in tariff engine for managing pricing, interest, commissions, and rebates.
 - Supported a multi-asset, multi-currency model, offering a hierarchical account structure for a detailed view of financial data.
 - Enhanced reporting with "Accounting Events" for downstream applications and implemented extensive access, audit, and error logging.

- Developed high-capacity transaction processing, handling up to 1,000 transactions per second per ledger account, and built a high-scale API to serve end customers reliably.

Tech Stack: React, TypeScript, Python, PyTorch, Node.js, GRPC, Envoy Proxy, REST API, PostgreSQL, MongoDB, Redis, Docker, Kubernetes, Prometheus, Grafana,, Jest.

- Rara Design System
 - Designed and implemented a cohesive design system to ensure consistent UI across Rara's software products.
 - Built a scalable architecture within a monorepo to facilitate easy addition of new components
 - Developed complex, reusable components, including tables, date pickers, and charts, as part of the design system.
 - Published the design system library to NPM for seamless integration across multiple projects.

Tech Stack: React, Tailwind CSS, TypeScript, JavaScript, Storybook, Figma, NPM, Webpack, Rollup, ESLint, Prettier, Jest, React Testing Library, Chromatic, Git.

XENON TECHNOLOGY SOFTWARE ENGINEER

**Kathmandu, Nepal
Dec 2020–May 2021**

Designed and developed responsive job search and employer dashboard web applications, with secure authentication and authorization features.

- Developed job search and employer dashboard web applications, designing intuitive UIs and building responsive frontends.
- Implemented robust authentication and authorization systems to ensure secure user access and data protection.

Tech Stack: React, Node.js, TypeScript, JavaScript, TensorFlow, Express.js, PostgreSQL, MongoDB, JWT, OAuth, Webpack, ESLint, Prettier, Docker, AWS (EC2, S3), Jest, Mocha

SUNYA HEALTH PVT LTD FRONTEND ENGINEER & DESIGNER

**Lalitpur, Nepal
Jan 2020–Dec 2020**

Designed intuitive interfaces and developed dashboards, user management, and authentication features, enhancing user experience and app functionality.

- Developed data-rich dashboards using React and Next.js, implementing interactive charts and data visualizations for real-time health monitoring.
- Focused on optimizing performance and ensuring responsive design for a superior user experience.
- Designed an intuitive and engaging user interface using Figma, focusing on user experience and seamless navigation.
- Collaborated with stakeholders to translate user requirements into visually appealing and functional design elements.

Tech Stack: Figma, Adobe XD, React, TypeScript, JavaScript, Tailwind CSS, CSS3, HTML5, Storybook, Webpack, ESLint, Prettier, Git

EDUCATION

**TRIBHUVAN UNIVERSITY
Bachelor of Science in Computer Science and Information Technology**

**Kathmandu, Nepal
2017–2021**

- Completed 4 year bachelor study in different fields of computer science with major project in Machine Learning

ADDITIONAL INFORMATION

- Languages: English, Nepali.
- Awards: Won First Place in 'ICT Meetup Ideathone!', Won 'Best Ideation' in the RI Hackathon as part of a team with college friends, devising a solution for flood risk monitoring and notification [2021].