

Upnit Banga

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SUMMARY

Software Engineer with hands-on experience building and shipping production-grade web applications, platforms and APIs. Strong backend focus with Node.js, Django, PostgreSQL, Redis, and distributed systems combined with 10+ years of Solutions Engineering experience delivering customer-facing integrations. Proven at owning systems end-to-end: architecture, implementation, cloud deployment, monitoring, and documentation

CORE SKILLS

Backend & APIs: TypeScript, Node.js, Express, NestJS, Django, FastAPI, REST, JWT Auth

Databases & Caching: PostgreSQL, MongoDB, Redis, Vector Des (RAG), Prisma

Infra & Distributed Systems: Docker, AWS (EC2, S3), Nginx, RabbitMQ, WebSockets, CI/CD (Github Actions)

Frontend: Next.js, React, TailWindCSS, Shadcn, Bootstrap

AI / LLM Systems: LangChain, LangGraph, MCP, embeddings, vector databases, Multi-Agent Systems, Multi-Step RAG pipelines

Software Best Practices: Caching, Rate Limiting, Authentication & Authorization, Unit/Integration Testing, Version Control (Git)

Languages: JavaScript (ES6+), TypeScript, Python, HTML, CSS3, C++

EXPERIENCE

Software Engineer | Self-Employed

Dec 2023 – Present

Publishing Platform (Production SaaS)

- Worked with a Toronto based media company to design and deploy a Medium-like publishing platform with authentication, payments, SEO-optimized content delivery, text editor, and admin tooling.
- Built REST APIs and data models for users, posts, subscriptions, and payments; implemented secure JWT-based auth flows
- Integrated PayPal payments and handled web hook-based payment events reliably
- Dockerized services and deployed to AWS EC2 behind Nginx; added monitoring and error tracking with Sentry and structured logging.
- Delivered full architecture diagrams and deployment playbook to client, enabling reproducible production deployments.

Stack : Node.js, Express, PostgreSQL (Supabase/Prisma), Next.js, Docker, AWS EC2, Nginx

Retail E-Commerce Platform (Production Platform)

- Worked with an US based apparel company to Build and deploy a full e-commerce system (catalog, cart, checkout, order lifecycle, email verification)
- Implemented Paypal Orders API (create/capture flow) with idempotent backend handling
- Refactored platform into a reusable production template after client shutdown
- Containerized and deployed to cloud with persistent media storage via Cloudinary

Stack : Django, PostgreSQL (Neon), Docker, Cloudinary, Paypal API, Bootstrap, Django Templates

Event-Driven Microservices Backend

- Built a fault-tolerant microservices backend with API gateway and asynchronous service-to-service communication
- Implemented Redis caching and RabbitMQ message queues for decoupled, scalable workflows
- Documented APIs using OpenAPI and Redoc for internal and external consumers.

Stack: Node.js, Express, MongoDB Atlas, Redis, RabbitMQ

- Partnered with clients to **understand complex business requirements and contribute in the design and development of customized programmatic software solutions**, that drove an average **15% increase in client ROI**.
- Acted as a technical subject matter expert, providing in-depth product demonstrations and technical guidance, directly contributing to a **15% growth in client adoption and sales**.

Senior Solutions Engineer | Teltonika

Aug 2020 – Oct 2022

- Designed and integrated APIs, SDKs in AWS based IoT software to enable seamless interoperability with client systems **reducing onboarding time by 30%**.
- Owned full POC lifecycle using Github Actions and AWS EC2: requirement gathering, integration, deployment, monitoring.
- Partnered with product engineering on API design and system architecture to **reduce integration errors by 18%**

Solutions Engineer | Teltonika

Aug 2019 – Aug 2020

- Collaborated with backend teams to **design and ship new software features** based on user and operational requirements.
- Assisted in troubleshooting (debugging) and resolution of complex technical issues during solution implementation, minimizing downtime and achieving a **95% client satisfaction**.
- Debugged complex production issues and optimized backend flows to **handle 50% growth in user volume**.

Senior Sales Engineer | Rays Power Infra

Jun 2016 – Jan 2019

- Created technical specifications and requirements for SCADA software platform and solar projects, streamlining the design process and **reducing project scoping time by 20%**.
- Collaborated with product engineering teams to design and implement APIs and software features, ensuring **timely and budget compliant project delivery on 100% of managed projects**.
- Managed **technical queries and support for API integration, beta deployments and proof-of-concepts**.
- Led proof-of-concept design and implementation with client systems resulting in **90% successful client adoption**.

Technical Account Manager | Rays Power Infra

Apr 2013 – Jun 2016

- Analyzed client usage data and health checks identify opportunities for cross-selling and up-selling, resulting in a **55% revenue growth from existing clients**.
- Conducted technical demonstration of new platform features for existing clients, effectively answering intricate technical queries and showcasing system functionality to **upsell an average 5 clients per quarter**.
- Prepared technical documents for internal engineering teams based on client project specifications **ensuring precise communication and alignment**.

PROJECTS**Multi-Step RAG System (LangGraph)**

- Designed and implemented a multi-step Retrieval-Augmented Generation(RAG) pipeline that performs query decomposition, iterative retrieval, and syntheses across multiple retrieval steps.
- Built vector-based retrieval over embedded document chunks with re-ranking and context aggregation to improve answer quality for complex, multi-hop queries.
- Implemented structured LLM outputs for deterministic parsing and downstream processing.

Stack: Python, LangChain, LangGraph, vector databases, embeddings**Supervisor Multi-Agent Workflow (LangGraph)**

- Designed and implemented a multi-agent orchestration system using LangGraph's StateGraph with a Supervisor node that dynamically routes tasks across specialized agents (Prompt Enhancer, Researcher, Coder) based on structured LLM outputs.
- Integrated Tavily web search API and Python REPL tool as agent-bound capabilities, enabling ground research and live code execution within the same graph.

- Leveraged Pydantic models for deterministic, type-safe routing decisions across agent transitions.

Stack: Python, LangChain, LangGraph, Groq (Llama 3.1), Tavily Search, Pydantic

AI Content Generator

- Built a Django application that converts a single topic into long-form content + SEO copy + social posts.
- Implemented structured LLM output via JSON schema for reliable parsing and storage.

AI Recipe Generator

- Built an interactive SPA using React with async API calls to LLM for recipe generation

System-Level File Server (C++)

- Built a **high performance, light-weight system-level file server implementation with C++, leveraging POSIX socket APIs** to handle client-server communication for efficient file transfer operations.

EDUCATION

Harvard University

Computer Science - CS50 | Online

Aug 2023 – Nov 2023

University of Petroleum and Energy Studies

Masters of Business Administration

Aug 2011 – May 2013

Delhi University

Bachelor of Science - Electronics

Aug 2007 – May 2010