

PRABHAKAR PUNJ LAL

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H-1B transfer eligible with approximately 4.5 years remaining

Software Engineer with 4+ years of experience building scalable SaaS and distributed systems, including communication products used by 35K+ ZoomInfo customers. Building agentic AI systems using LangGraph, LangChain, RAG, structured outputs, tool calling, and multi-agent orchestration. Experienced in TypeScript, Python, Node.js, FastAPI, React/Angular, microservices, AWS, Kafka, Redis, and API design.

WORK EXPERIENCE

Independent Software Engineer – Agentic AI

Jan 2026 – Present

LoopHolio – AI Powered Terms of Service Analyzer | Sources: [Frontend](#), [Backend](#), [Live Demo](#)

- Built a full-stack application with a **Next.js** frontend and **FastAPI** backend, exposing document-analysis workflows through REST APIs and rendering structured clause-level risk reports.
- Architected an end-to-end document intelligence system that transforms lengthy Terms of Service agreements into clause-level risk reports through specialized extraction, legal reasoning, explanation, and report-generation stages.
- Built a parallel **LangGraph** execution pipeline that fans document chunks across independent agent workflows, enabling concurrent analysis while preserving source traceability from every identified risk back to its source clause.
- Enforced typed inter-agent contracts using **LangChain** structured outputs and **Pydantic** schemas, eliminating brittle free-form parsing and constraining agents to evidence-grounded, schema-valid responses.
- Implemented document ingestion and structure-aware, tokenization-aware chunking with **IBM Docling HybridChunker**, preserving section context and source metadata throughout the pipeline for auditable risk analysis.

Research Agent | [Source](#)

- Engineered a hierarchical **LangGraph** research system using a parent graph and dynamically spawned examiner subgraphs to independently investigate multiple dimensions of a research topic before synthesizing a citation-backed report.
- Implemented dynamic parallel execution with LangGraph's **Send API** and reducer-based state aggregation, allowing examiner workflows to execute independently and merge their findings into shared graph state.
- Designed resumable, stateful agent workflows using **Pydantic** state schemas and checkpointing, with conditional routing that determines whether additional research is required before generating the final report.
- Integrated **Tavily** and **Wikipedia** as parallel retrieval tools and implemented a human-in-the-loop approval gate that allows reviewers to approve or regenerate AI-generated examiner personas before research begins.

Software Engineer II, ZoomInfo, Waltham, MA

Jul 2021 – Mar 2024

- Developed VoIP, bridge calling, voicemail, and SMS features for ZoomInfo's communication platform, serving 35K+ companies worldwide.
- Developed core **Node.js** APIs to support multiple products and increased unit test coverage from 60% to 95%.
- Implemented notifications and custom rate limiting algorithm for SMS in **Node.js** using **AWS SNS** and **Redis**.
- Developed analytics services using the **Amplitude API** to track 30+ product and user-behavior metrics.
- Migrated functionality from a **C#** monolith into three Node.js microservices, improving service isolation and maintainability.
- Built **Kafka** consumers and producers to move database-intensive operations asynchronously, reducing load on synchronous request paths.
- Implemented contact conflict resolution for incoming calls using **AWS SQS** with retry mechanism to handle processing failures.

React Developer, Infyology, Richardson, TX

Nov 2020 – Mar 2021

- Wrote backend APIs and refactored frontend components to significantly reduce bundle package size by 15%.
- Improved application performance by analyzing and updating backend queries in Node.js and **MySQL** server.
- Developed page filters and implemented pagination feature for a pharmaceutical e-commerce platform.

Research Assistant, Boston University, Boston, MA

Mar 2020 – Nov 2020

- Led a research project to automate detection of software design patterns in source code to improve pattern identification time by 90%.
- Wrote bash scripts to convert Java code into **Abstract Syntax Tree (AST)** in XML format.
- Devised algorithms to extract inheritance/composition information from the AST nodes to detect class relationships.

TECHNICAL SKILLS

AI/Agentic Systems: LangGraph, LangChain, Agentic AI, Multi-Agent Systems, RAG, Prompt Engineering, Structured Outputs, Tool Calling, Pydantic

Languages: TypeScript, JavaScript, Python, Java, C#

Backend/Distributed Systems: Node.js, NestJS, FastAPI, Microservices, REST APIs, Kafka

Frontend: React, Next.js, Angular, Redux

Databases/Cloud/Tools: MSSQL, MySQL, MongoDB, Redis, AWS (SNS, SQS, EC2, Lambda, IAM), Jest, IBM Docling

EDUCATION

Master of Science in Computer Science, **Boston University, Boston, U.S.A.**

Sep 2017 – Sep 2019

Bachelor of Technology in Computer Engineering, **College of Technology, G.B.P.U.A.T, India**

Aug 2010 – Jan 2015