

# Amit Kumar Patel

Full Stack Developer — AI & ML Researcher — 5.2+ yrs experience

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## Summary

*Full Stack Software Engineer with 5+ years of experience building scalable web systems and AI-powered products. Experienced in backend, frontend, cloud-native infrastructure, and LLM pipelines, with a record of improving system reliability by 40%, supporting platforms used by 1,000+ stores, and mentoring engineers. Published AI research in computer vision robustness.*

## Skills

Python, JavaScript/TypeScript, Node.js, Java, PHP, SQL  
React, Next.js, Django, Flask, FastAPI, React Native, Laravel, Angular, Tailwind, Shadcn, Redux-Saga, Sequelize, Docker, Kubernetes, Kafka, RabbitMQ, Jenkins, AWS, CI/CD, PostgreSQL, MySQL, MongoDB, Redis, DynamoDB, PyTorch, TensorFlow, Keras, scikit-learn, LLMs, CNNs, RAG, LlamaIndex, LangChain, LangGraph, Git, REST, GraphQL, Android, Snowflake, Firebase, Agile/Scrum

## Education

**University of South Dakota** Vermillion, SD, USA  
*MS in Computer Science - AI* Aug 2024 – Present  
**IOE, Pulchowk Campus, Tribhuvan University** Lalitpur, Nepal  
*Bachelors in Computer Engineering* Nov 2014 – Sep 2018

## Experience

**Senior Software Engineer II** Oct 2023 – Aug 2024  
*LIS Nepal* Lalitpur, Nepal

- **Inteliome, AI Chatbot** – Built production web apps and APIs used across teams, improving reliability and delivery speed (**Next.js, Django, Python**).
- Designed and deployed scalable AI pipelines, improving system reliability by 40% (**OpenAI, Hugging Face, LlamaIndex, VectorDB, LangChain, RabbitMQ, Kubernetes**).
- Mentored 3 engineers and established software best practices, reducing onboarding time by 25%.

**Software Developer** Aug 2022 – Present  
*Toptal* Remote

- **Toptal Top 3%** – Part of Toptal's elite developer network for full-stack and backend engineering.

**Freelance Software Engineer** Mar 2022 – Oct 2022  
*Freelance* Remote

- Delivered **Hair Density Tracker** for real-time analysis, improving prediction accuracy by 30% by building Computer Vision pipelines using **React, Python, OpenCV**.

- Developed **LegalFit CRM** for US law firms with multiple clients, improving UI responsiveness and workflow efficiency by designing modular front-end components using **HTML, SCSS, Jinja, JavaScript**.
- Implemented AI-powered **Compliance Q&A Backend** supporting 1,000+ automated queries by integrating **LangGraph, vector databases, MongoDB, Kafka, Node.js, and Python**.

**Senior Software Engineer** Aug 2021 – Feb 2022  
*LIS Nepal* Lalitpur, Nepal

- Built **Gocchii Compliance Tools** used across 5+ locations, automating regulatory checks and reducing manual effort by 50% using **React.js, Python (Django), React-Query, Redux-Saga, MUI, Plaid**.
- Built **Project Management & Timesheet System** for 200+ employees, improving reporting accuracy by 35% using **React.js, PHP (Laravel), PostgreSQL**.

**Software Engineer** Aug 2020 – Aug 2021  
*LIS Nepal* Lalitpur, Nepal

- Built **Curbside Pickup, Contactless Retail Solution** for 1,000+ stores across 10+ time zones, enabling centralized retail management using **Node.js, EJS, REST API, MySQL, Sequelize**.
- Developed **Nepal Stock Exchange Trade Management System** handling \$34B market-cap trades, optimizing backend performance, and implementing 90% test coverage using **Java, Angular, Redis, Jenkins, JUnit, Mockito**.
- Developed **Auction Engine** supporting high-throughput bids, improving transaction reliability and scalability, using **Java, Angular, Scala, Redis, Shell Script, MS SQL, RabbitMQ, Jenkins, Docker**.
- Built **Robling ETL Monitoring App** to visualize ETL pipelines, track process metrics over time, and identify bottleneck scripts, reducing downtime by 20%, using **React Native, Python, Firebase**.

**Associate Software Engineer** May 2019 – Aug 2020  
*LIS Nepal* Lalitpur, Nepal

- Built **OpinionShield** Android app for business ratings and reviews, integrating **Java, RxJava, Retrofit, In-App Purchase, Plaid API**, reaching 5,000+ active users.
- Configured **Oracle Xstore POS** for retail clients using **Java, XML, POS systems**, reducing setup time by 30%.

## Publications

- Robin N. Ranabhat, Longwei Wang, **Amit Kumar Patel**, K.C. Santosh, *Promoting Shape Bias in CNNs: Frequency-Based and Contrastive Regularization for Corruption Robustness*, arXiv:2509.11355 (3rd Best Paper Award) [link].