

# Arghyadeep Karmakar

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[github.com/RUiNtheExtinct](https://github.com/RUiNtheExtinct) — <https://rte-portfolio.vercel.app>

**Summary** — Full-Stack Engineer with 3+ years building scalable enterprise applications serving **1M+ users**. Expert in **React/Next.js** frontend architecture, **Python/Node.js** backend systems, **AI/ML integration** (LangChain, LLMs, GenAI), and **DevOps automation** (Kubernetes, Terraform, CI/CD). Proven track record reducing costs by \$500K through infrastructure optimization and improving performance by 30-50% across the stack.

## Technical Skills

<b>Frontend:</b>	React, Next.js, TypeScript, Redux, Tailwind CSS, Jest, React Native	<b>Cloud:</b>	AWS (EC2, Lambda, S3, RDS), Azure (AKS, Functions), GCP (GKE, Cloud Run, GCE)
<b>Backend:</b>	Node.js, Python, FastAPI, Express.js, Spring Boot, REST APIs	<b>Databases:</b>	PostgreSQL, MySQL, MongoDB, Redis, Elasticsearch, Prisma, Drizzle
<b>AI/ML:</b>	LangChain, LlamaIndex, OpenAI, Claude, Gemini, Stable Diffusion, RAG, Vector DBs	<b>CI/CD:</b>	Jenkins, GitHub Actions, GitLab CI, Azure DevOps, CircleCI
<b>DevOps:</b>	Kubernetes, Docker, Terraform, ArgoCD, Helm, GitOps	<b>Monitoring:</b>	Prometheus, Grafana, ELK Stack, Datadog

## Professional Experience

### WorkIPO

March 2025 – Present

Software Development Engineer L2

Remote

#### Full-Stack Platform Development

- Architected microservices-based trading platform handling **50K+ concurrent users** with React frontend and Node.js/Python backend(s)
- Optimized PostgreSQL queries and implemented Redis caching, reducing API response times by **30%** and database load by **40%**
- Streamlined CI/CD pipelines with GitHub Actions and Kubernetes, reducing deployment time by **20%**
- Implemented real-time WebSocket connections for live market data streaming to **10K+ simultaneous clients**

### Publicis Sapient

June 2022 – March 2025

Software Development Engineer L1

Jan 2025 – Mar 2025 (Pune)

#### AI-Powered Content Generation Platform (Full-Stack & AI Lead)

- Led cross-functional team of 20+ engineers building enterprise AI studio using **Next.js, TypeScript, Python FastAPI**
- Designed and deployed production LLM orchestration system processing **10K+ daily requests** with 99.9% uptime
- Built React-based web editors with drag-and-drop functionality, real-time collaboration, and cloud storage integration
- Implemented RAG pipeline with vector databases (Pinecone, Weaviate) for context-aware AI responses
- Integrated multiple AI models (GPT-4, Claude, Gemini, Stable Diffusion, DALL-E) with custom prompt engineering
- Deployed auto-scaling Kubernetes clusters on AWS EKS, handling **65K+ monthly active users**

#### Enterprise Cloud Management Platform (Full-Stack & DevOps)

- Architected scalable microservices handling **1M+ API requests/day** using Spring Boot, React, and PostgreSQL
- Developed responsive React frontend with Redux state management, reducing load times by **45%**
- Implemented event-driven architecture with Kafka for real-time data streaming and notifications
- Established Infrastructure as Code using Terraform, managing 200+ cloud resources across AWS and Azure
- Built comprehensive CI/CD pipelines with Jenkins, Docker, and Kubernetes, reducing deployment cycles by **50%**

Associate Software Development Engineer L2

Jul 2023 – Dec 2024 (Remote)

#### CoreAI Platform - Infrastructure & DevOps Lead

- Designed and implemented scalable CI/CD pipelines using **Azure DevOps** and **GitLab CI** for 20+ teams
- Automated infrastructure provisioning with **Terraform** managing AKS clusters, databases, and networking
- Optimized GPU workload scheduling for ML models, reducing cloud costs by **\$500K annually**
- Implemented service mesh (Istio) for microservices communication and zero-downtime deployments
- Built monitoring stack with Prometheus, Grafana, and custom alerting reducing MTTR by **60%**

#### Enterprise API Platform (Backend & System Design)

- Developed high-performance REST and GraphQL APIs serving **1M+ global users** using Node.js and Python
- Designed distributed caching layer with Redis handling **100K+ requests/second** with sub-200ms latency
- Implemented OAuth 2.0 authentication, role-based access control, and API rate limiting
- Built data pipeline with Apache Kafka and Elasticsearch for real-time analytics and search

Mobile Commerce Platform (Frontend & Full-Stack)

- Developed cross-platform mobile app using **React Native** with AR product visualization features
- Built responsive web application with Next.js, reducing checkout abandonment by **45%**
- Integrated payment gateways processing **\$100K+ monthly transactions** with PCI compliance
- Implemented Progressive Web App (PWA) features increasing mobile engagement by **35%**

## Key Projects & Achievements

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### Open Source Contributions

2024 – Present

- Core contributor to **ComfyUI** - Added 5+ features for AI workflow automation and fixed critical performance bugs
- Resolved breaking bug in **Filerobot Image Editor** affecting 10K+ users
- Contributed to **LangChain** documentation and example implementations

### Technical Architecture Achievements

- Migrated monolithic application to microservices architecture serving 500K+ users with zero downtime
- Implemented event sourcing and CQRS patterns improving system scalability by **3x**
- Built custom Kubernetes operators for automated scaling based on business metrics
- Designed multi-region disaster recovery strategy with RPO i 1 hour and RTO i 4 hours

### AI/ML Engineering Projects

- Built production RAG system using LangChain, achieving 95% accuracy on domain-specific queries
- Developed custom fine-tuning pipeline for LLMs reducing inference costs by **40%**
- Implemented real-time computer vision system processing 30 FPS video streams

## Education

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### K. J. Somaiya College of Engineering

Bachelor of Technology in Information Technology

GPA: 9.3/10 — Dean's List: All Semesters

Mumbai, India

Aug 2018 – May 2022

## Certifications & Training

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- **Cloud:** AWS Certified Solutions Architect, GCP Cloud Digital Leader, Azure Fundamentals
- **DevOps:** Certified Kubernetes Administrator (CKA) - In Progress
- **AI/ML:** Deep Learning Specialization (Coursera), LangChain Certified

## Technical Leadership

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- Published **15+ technical articles** on AI/ML, system design, and cloud architecture with 50K+ total views
- Mentored 10+ junior developers on best practices in full-stack development and DevOps
- Led architectural reviews and established coding standards across 5 engineering teams
- Speaker at internal tech talks on microservices, Kubernetes, and AI integration