

Arghyadeep Karmakar

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Summary — Full-stack engineer with extensive experience in **React**, **Next.js**, **Typescript**, and **Python API** development, proficient in leveraging AI and LLMs to develop robust, scalable applications, and also automating deployment processes for them using **ArgoCD** and **Terraform**.

Skills

Automation Terraform, GitlabCI, Azure DevOps, Jenkins, Github Actions

Cloud Azure, GCP, AWS

Languages Python, Typescript, C, C++, Bash, Java

Frameworks Next.js, Node.js, FastAPI, Flask, React,

SpringBoot

AI Langchain, LlamaIndex, Stable Diffusion

OS Debian, Ubuntu, Windows, MacOS

DevOps Kubernetes, Docker

Experience

Publicis Sapient

Software Development Engineer L1

June 2022 – Current

January 2025 – Current

AI Studio

- Led a cross-functional team of 20+ engineers in developing an AI-powered multimedia studio and content generation platform.
- Utilized technologies such as Next.js for frontend and Python/FastAPI, Redis, and Prisma for backend.
- Architected and deployed a production LLM pipeline processing 10K+ daily requests with GPT-4, Claude, and Gemini Pro, achieving 99.9% uptime and 800ms avg response time.
- Integrated image generation models like Stable Diffusion, Flux, Dall-e, Imagen and video generation models such as Runway and HeyGen.
- Launched sophisticated web editors for seamless image and video content management, significantly enhancing user experience.
- Optimized full-stack performance serving **65K+** monthly active users for AI-assisted content generation.

Enterprise Cloud Management Platform

- Led a multidisciplinary team of 30 engineers to develop a scalable enterprise cloud management platform using Spring Boot (Java), React, and SQL databases.
- Directed architecture design and implementation of microservices using Spring Boot, achieving efficient handling of 1M+ concurrent API requests per day with latencies less than 200ms.
- Oversaw the frontend architecture built with React, optimizing performance through advanced state management and responsive UI, leading to a 40% increase in user engagement.
- Implemented data streaming pipelines (Kafka) for real-time analytics and notifications, enabling timely insights and improving operational decisions.
- Managed DevOps practices including CI/CD pipelines with Jenkins and container orchestration with Kubernetes reducing deployment cycles by 50%.
- Improved database performance through optimized queries, indexing, and schema refinement, resulting in a 35% reduction in database load.

Associate Software Development Engineer L2

July 2023 – Dec 2024

Client: CoreAI (Publicis Groupe)

- Established templated, scalable CI pipelines using **Azure CI** for CoreAI platform.
- Automated cloud infrastructure provisioning with **Terraform**, including Kubernetes clusters, blob storage, databases, key vaults, and app gateways.
- Optimized GPU workloads, cutting operational costs by approximately 2.5x, resulting in annual savings of **\$500K**.
- Engineered robust network routing solutions for seamless inter- and intra-application communication.
- Collaborated across **20+** teams for streamlined project onboarding and deployment.

Enterprise API

- Developed a hierarchical role management system using Java and Spring Boot, enhancing resource allocation efficiency by **30%** for **1M+** users globally.
- Designed resource management solutions with PostgreSQL and optimized caching, handling **thousands** of requests per second efficiently.
- Integrated monitoring and tracing solutions including Kibana, Prometheus, and Zipkin to improve analytics and system observability.

Client: Container Store

- Developed an AR-based mobile application using React-Native, enhancing product visualization for customers.
- Implemented a streamlined checkout process, decreasing abandonment rate by 45% and processing \$100K+ monthly transactions.
- Integrated administrative functionalities for efficient user registration and inventory management.

Education

K. J. Somaiya College of Engineering

Aug 2018 – May 2022

Bachelor of Technology in Information Technology

GPA - 9.3

Certifications

Cloud

- AWS - AWS Cloud Practitioner
- GCP - Cloud Digital Leader

Projects

Technical Blog Author (2023-Present)

Mar 2023 – Present

- Published 15+ technical articles on LLM architecture, Agentic Frameworks, Computer Vision, Unreal Engine, etc.
- Over 5K reads on my articles on most articles.

Open Source Contributor

Aug 2024 – Present

- Contributed 5+ bug fixes and 3 new features to core functionality and plugins (**ComfyUI**).
- Fixed major bug that broke the entire app (**Filerobot Image Editor**).