

Saroj Ghosh

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Education

Siddaganga Institute of Technology, Tumakuru

October 2024 - Present

Bachelor of Engineering in Computer Science and Engineering (CGPA - 9.43)

Expected July 2028

Relevant Coursework

- Operating Systems
- Object-Oriented Programming
- Computer Organization & Architecture
- Design and Analysis of Algorithms
- Theory of Computation
- Discrete Mathematics
- Data Structures

Projects

DSA Forge

March 2026 - Present

- Built a full-stack DSA learning platform using **Next.js**, **TypeScript**, **PostgreSQL**, featuring **500+ problems** across **50+ patterns** and **15 topics**, with **Java** and **C++** templates and structured solution approaches.
- Designed an optimized **PostgreSQL schema** with **Prisma ORM**, leveraging indexed relations and efficient joins to track user progress, solved problems, and streaks with low-latency queries.
- Implemented secure authentication using **NextAuth.js (JWT)** and **bcryptjs**, protected API routes via middleware, and deployed on **Vercel** with **Neon PostgreSQL** ensuring scalable, production-ready performance.

Krishi Mitra

Sept 2025

- Engineered an AI-powered crop disease detection PWA using **React**, **Firebase**, **TensorFlow.js**, designing an **offline-first system architecture** enabling real-time on-device diagnosis **without server dependency**.
- Integrated a pretrained **TensorFlow.js** image classification model, optimizing browser-based inference for low-latency, real-time predictions on low-end devices.
- Implemented a **geospatial hotspot detection system** identifying outbreaks (3+ cases within 5km) and integrating **OpenWeatherMap API** for real-time, weather-aware recommendations.

BlogIt

Nov 2025 - Present

- Built a full-stack social blogging platform using **MongoDB**, **Express**, **React**, **Node.js**, supporting markdown rendering, dynamic user profiles, and RESTful APIs for CRUD operations on posts and users.
- Engineered stateless **JWT-based authentication** with **Joi schema validation**, securing API endpoints and ensuring data integrity across user sessions.
- Deployed a resilient production architecture using **Vercel (frontend)** and **Render (backend)**, configuring strict **CORS** policies and environment variables for secure cross-origin communication.

Technical Skills

Programming & Scripting Languages: Java, JavaScript, TypeScript, C++, Python

Backend: Node.js, Express.js

Databases: MongoDB, PostgreSQL

Frontend: React.js, Next.js, HTML, CSS

Tools & Platforms: Linux, Git/GitHub, Jenkins, Postman

Data & ML: NumPy, Pandas

Coding Profiles

Codeforces

March 2025 - Present

Competitive Programming Platform

Kernel6 (Pupil)

- Solved **80+** problems of varied difficulty to test my algorithmic capability.
- Participated in **13+** contests, and achieved a max Contest Rating of **1282**

LeetCode

Jan 2025 - Present

Problem Solving & DSA Practice

s4rojx

- Solved problems across arrays, strings, searching, sorting, recursion, dynamic programming, and binary search; currently expanding into **trees and graphs**.