Rimo Ghosh

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EDUCATION

Kalinga Institute of Industrial Technology, Bhubaneshwar — 2021-2025
Bachelor of Technology in Computer Science and Engineering — *Cgpa - 8.61*

EXPERIENCE

Machine Learning Intern — July - September 2024
RenewHeat — *Remote*
- Developed a hybrid recommendation system for an e-commerce platform, integrating collaborative filtering and content-based approaches using CLIP embeddings and pymilvus vector database, improving product discovery by 20%.
- Developed a real-time feedback pipeline using Kafka to process user interactions, enabling dynamic updates to recommendations with an online learning approach, reducing latency by 30%.
- Built a graph-based recommendation module with Neo4j to identify complementary products, enhancing cross-selling opportunities and increasing average order value.

PUBLICATIONS

IndiRTS: Real Time Segmentation for Indian Conditions — SN Science Journal
- Developed a custom lightweight semantic segmentation model for real-time applications in autonomous vehicles.
- Tailored the model for complex urban environments based on the Indian Driving Dataset.
- Achieved a **MIoU of 0.6064** with only **0.45 M parameters**, demonstrating effectiveness in segmentation tasks as compared to other segmentation models having nearly ten times the model parameters.

PROJECTS

SocialWave | *NextJs, NextAuth, MongoDB, React, Shadcn, Firebase* — June 2025
- Built a lightweight social media platform enabling users to post, like, follow others and share content, in real time.
- Integrated OAuth authentication using providers like Google via Auth.js, ensuring secure and frictionless user access.
- Utilized Next.js features like API routes and ISR to dynamically fetch user-generated content and update feeds efficiently without full page reloads.

ShopEase | *React, Redux, Express, MongoDB, Firebase, Stripe* — March 2025
- Developed a full-stack E-commerce application with React, Node.js, and Firebase Firestore for secure data management.
- Implemented JWT authentication with role-based access control and integrated Stripe API for secure payments.
- Used Redux for managing global state across login/signup workflows, cart functionality, and user session persistence.
- Designed a paginated product display to optimize performance and built an admin dashboard for efficient management.

CollabDocs | *React, Express, MongoDB, Socket.io* — February 2025
- Built a real-time collaborative text editor similar to Google Docs, allowing multiple users to edit shared documents simultaneously.
- Implemented robust storage, enabling users to view, edit, and manage their previously created documents with secure JWT-based authentication for access control and session management.
- Integrated Socket.io for real-time synchronization, ensuring low-latency updates and seamless collaboration.

GoBalancer | *Golang,Go-fiber, MongoDB* — November 2024
- Developed a simple load balancer using weighted Round Robin Scheduling to distribute traffic across multiple backend servers.
- Integrated periodic health checks to monitor the status of backend servers.
- Dynamically adjusted routing based on server availability and performance, resulting in a 20% increase in overall system reliability.

TECHNICAL SKILLS

Languages: C/C++, Python, Golang, SQL, JavaScript
Libraries: React, Express, NextJs, Numpy, Pandas, PyTorch, LangChain
Database: MySQL, MongoDB
Certifications: Machine Learning Specialization (Coursera), Deep Learning with PyTorch (Jovian)
Other Skills: Data Structures, Algorithms, Database Managment, Problem Solving

LEADERSHIP

- **Google Developers Solution Challenge**: Led a team of 4 to develop a **sign language video conferencing system** with real-time transcription, enhancing accessibility for hearing-impaired users.

CODING PROFILES

- Solved more than **600+ problems** across multiple competitive programming platforms.
- Achieved a rating of **1657** on **LeetCode**, a rating of **1382** on **Codeforces**, and a **3-star** on **CodeChef**.