

## Profile Summary

**Name:** Lakshya Paliwal

**Education:** Third-year Computer Science student, Manipal University Jaipur

**Origin:** Gurgaon, India

**Primary Interests:** Full-stack development, Large Language Models, Generative AI, DevOps, System Design

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## Professional Focus

- Building scalable full-stack applications
  - Designing AI-powered systems
  - Working with WebRTC, cloud infrastructure, and AI evaluation pipelines
  - Exploring LLM reasoning, temporal understanding, and multi-agent systems
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## Work Experience

### Oddmind Innovations — AI Interview Platform

**Duration:** June 2025 – November 2025

**Website:** <https://interviews.zariya.ai/>

**Context:**

Startup focused on building an AI-powered interview preparation platform for consulting, growth marketing, and product management case interviews.

**Core Responsibilities:**

- Integrated **LiveKit (WebRTC)** for real-time AI-driven interviews
- Migrated away from OpenAI-based conversational flow due to long-context instability
- Implemented **Razorpay** for secure payment processing
- Designed frontend-based interview recording pipeline
- Built **AWS S3 multipart upload pipeline** for video recordings (90% upload time reduction)
- Integrated **Gemini** for interview evaluation and feedback generation
- Implemented **cron-based background jobs** for delayed feedback email delivery (runs every ~30 minutes)

*Details about LiveKit, multipart uploads, or Gemini evaluation should only be surfaced when explicitly queried.*

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## Responsenet — Full stack & Intern

**Duration:** December 2025 – Present

**Organization Website:** <https://www.responsenet.org/>

### Project 1: ImpactVolunteer

**Website:** <https://impactvolunteer.com/>

#### High-level Description:

A multi-role platform connecting volunteers, nonprofits, corporations (CSR), and academic institutions.

#### Key Contributions:

- Refactored a severely unstructured legacy codebase (~1000+ files)
- Re-designed UI and core workflows for readability, performance, and maintainability
- Improved architectural consistency across the codebase

*Detailed platform role explanations should only be returned if specifically asked.*

### Project 2: Responsenet Website Migration

#### Objective:

Migrate a 20+ year-old WordPress website to **Next.js** without breaking SEO or existing URLs.

#### Key Contributions:

- Automated scraping of:
  - SEO metadata (OG tags, Twitter cards, canonical URLs)
  - JSON-LD structured data
- Downloaded and restructured all WordPress content and media assets
- Preserved URL structure to avoid SEO regressions
- Migrated content into a structured Next.js architecture
- YouTube-to-Website Automation\Automatically sync YouTube uploads to the website and database.

#### Implementation of the Youtube-to-website feature:

- Used **PubSubHubbub** (publish-subscribe + webhook architecture)
  - Subscribed to YouTube channel feeds
  - On new video upload:
    - Webhook triggers backend ingestion
    - Video stored as embed entry in database
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## Research Experience

### Chronocept Project — Temporal Reasoning in LLMs

Paper: <https://arxiv.org/abs/2505.07637>

#### Research Goal:

Enable large language models to better understand and reason about time.

**Role:** Data Annotation & Benchmark Design

#### Key Contributions (High-level):

- Annotated temporal datasets using a structured, multi-step protocol
- Worked on two custom benchmarks for temporal supervision

#### Annotation Framework:

- **Temporal Segmentation:** Broke text into timeline-consistent segments
- **Primary Axis Classification:** One of eight temporal axes:
  - Main, Intention, Opinion, Hypothetical, Generic, Negation, Static, Recurrent
- **Secondary Axis:** Temporal validity distributions annotated using skewed normal distributions ( $\xi$ ,  $\omega$ ,  $\alpha$ ) on a logarithmic time scale

#### Quality Control:

- Dual-annotator system per sample
- Periodic audits of 10% annotations
- Strict agreement thresholds (ICC, Jaccard Index,  $P\pi$ )
- Ambiguous samples preserved via union-based resolution

*Statistical thresholds and annotation mechanics should only be explained when explicitly requested.*

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## Projects

### Smart Voice Navigator

Github: <https://github.com/21lakshh/Smart-Voice-Navigator>

#### Description:

A real-time visual navigation assistant for visually impaired users, built using a **multi-agent state machine** inside the LiveKit ecosystem.

### Architecture Overview:

- **Central Reasoning Engine:** Google Gemini Flash
- **Agent Pipeline:**
  - Intent & location capture
  - Object detection using **YOLOv11**
  - Semantic matching using **SentenceTransformers (MiniLM)** for label robustness
  - Depth estimation for spatial awareness
  - Fallback **RAG agent** querying a structured household knowledge base when objects are not detected

### Interaction Layer:

- OpenAI STT for speech recognition
  - Sarvam TTS for low-latency voice responses
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## Finfluenzz

Github: <https://github.com/21lakshh/Finfluenzz>

Live: <https://finfluenzz.vercel.app/>

### Description:

A retro-gaming-inspired, AI-powered fintech platform designed to improve financial literacy for Gen Z through gamification.

### Core Features:

- AI finance advisor (Groq + Gemini)
- Stock & crypto analysis with technical indicators (RSI, SMA, MACD)
- Portfolio risk and diversification analysis
- Real-time financial news aggregation
- Budget tracking with AI-generated spending summaries
- Gamified XP, levels, and achievement system

### Tech Stack:

- Frontend: React 18, TypeScript, Vite, Tailwind CSS
  - Backend: Cloudflare Workers, Hono, Prisma, Neon PostgreSQL
  - APIs: Groq, Gemini, Alpha Vantage, Finnhub, CoinGecko
  - Auth & Security: JWT, bcrypt, RBAC
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## Snippify

Github: <https://github.com/21lakshh/Snippify>

**Live:** <https://snippify-zeta.vercel.app/>

**Description:**

A full-stack developer platform for discovering, managing, and AI-generating reusable code snippets.

**Core Capabilities:**

- CRUD operations for snippets (public & private)
- AI-powered code generation, explanation, and refactoring
- Curated UI component library

**Tech Stack:**

- Frontend: React, TypeScript, Tailwind CSS
  - Backend: Cloudflare Workers, Hono
  - Database: PostgreSQL
  - AI: Groq Cloud LLMs
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## **ReaLM — AI-Powered Information Verifier**

Github: <https://github.com/21lakshh/ReaLM>

**Description:**

A Chrome extension that verifies online claims and detects misinformation by combining AI-based claim extraction with real-time web search verification.

**Core Capabilities:**

- Screenshot-based claim capture from any website
- AI-driven core claim extraction
- Real-time fact verification using live web search
- Verdict generation with supporting reasoning and sources

**System Design (High-level):**

- Claim extraction and reasoning powered by **Google Gemini**
- Web evidence retrieval via **Tavily Search API**
- Stateless verification backend deployed on **Cloudflare Workers**
- Chrome extension frontend for screen capture and user interaction

**Tech Stack:**

- Backend: Hono, Cloudflare Workers, TypeScript
- AI: Google Gemini
- Search: Tavily
- Extension: React, TypeScript, Tailwind CSS, Vite

*Implementation details such as screenshot processing, claim extraction prompts, or verification logic should only be surfaced when explicitly queried.*

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## Additional Links for more Projects

- GitHub: <https://github.com/21lakshh>
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## RAG Usage Notes (Meta)

- Each section is intentionally isolated for selective retrieval
- Avoid returning multi-section responses unless explicitly requested
- Prefer answering with the **smallest relevant subsection**
- Expand only when the user asks follow-up questions