

# Dhruv Sen

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## EXPERIENCE:

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### Great Chyren Welfare

May 25 – Nov' 25

#### Freelancer

- Designed an intuitive, user-centric **UI/UX** for an AI-powered wellness application, ensuring intuitive navigation and engaging user interactions.
- Developed the application using **Flutter**, **Firestore** (with Authentication), and **REST APIs**, featuring both voice and text-based AI assistants, and improving response speed to **500 ms** for real-time interactions.
- Built a voice-enabled **AI pipeline** integrating **speech-to-text (STT)**, **RAG-based reasoning**, and **text-to-speech (TTS)** for natural, context-aware voice assistance.

## PROJECTS:

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### GrievanceAI: Duplicate Grievance Detection | [Live](#) & [Github](#)

Dec' 25

- Architected an NLP-powered duplicate detection system for citizen grievance management using transformer embeddings (**all-MiniLM-L6-v2**, **384-dim**) model and **DBSCAN** clustering, processing 100+ grievances per batch.
- Orchestrated a **multi-metric similarity pipeline (Cosine + Jaccard + N-gram)** with adaptive threshold learning across 7 grievance categories.
- Rolled out a **microservice** architecture with Flask embedding server, React dashboard, and Node.js backend featuring hierarchical deduplication and auto-categorization.

### GovAI: Electricity Theft Detection | [Live](#) & [Github](#)

Dec' 25

- Designed an **unsupervised anomaly detection** pipeline using **Isolation Forest & Autoencoder** on high-dimensional smart-meter features, achieving stable anomaly ranking across multiple runs with **>70%** overlap in top-risk consumers.
- Optimized model performance through percentile-based thresholding and regional segmentation, reducing false positives by **25%** in high-variance consumption zones.
- Translated complex ML outputs into explainable insights via a **React** dashboard, enabling non-ML stakeholders to interpret anomaly drivers through time-series plots and feature summaries.

### Dia Therapist: Whisper + LLM | Speech & Text-Based Empathetic Service | [Github](#)

Jan' 25 – Apr 25

- Crafted a real-time AI therapy assistant for Gen Z users with seamless speech and text-based interaction using Next.js and **OpenAI Whisper** for ASR + TTS.
- Fine-tuned **Qwen 2-7B LLM** with **LoRA** (4-bit quantization) and integrated **RLHF** for empathetic, knowledge-grounded responses.
- Augmented an emotion-aware sentiment pipeline analyzing tone and text, enhancing model empathy and efficiency by 20%.

## CERTIFICATIONS:

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- Cloud Computing | NPTEL | [Link](#) Apr' 25
- Mobile Application Development using Flutter | Cipher Schools | [Link](#) Jun' 25

## SKILLS:

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- Programming & Scripting:** Python, JavaScript, PHP, C, C++, Java, Dart
- Web & Mobile Development:** React, Next.js, React Native, Flutter, REST APIs, MySQL, Firebase, Supabase
- Machine Learning & AI:** Scikit-learn, Pandas, NumPy, TensorFlow, PyTorch, RAG, LLMops
- NLP & Speech AI:** Hugging Face, OpenAI Whisper, spaCy, TTS, NLTK
- Tools & Deployment:** Git, GitHub, FastAPI, Flask, Postman, Docker, Cloudflare

## EDUCATION:

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- Lovely Professional University** Phagwara, Punjab  
Bachelor of Technology (B.Tech) in Computer Science | **CGPA: 8.1** Aug'23 - Present
- St.Norbert School** Indore, M.P  
Intermediate | **Percentage: 85.4** Jun' 21 – Jul 22
- St.Norbert School** Indore, M.P  
Matriculation | **Percentage: 87** Jun' 19 - Jul 20