

# Simran

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## Skills

**Languages:** Python, C/C++, Java, JavaScript, TypeScript, SQL

**AI/ML & Data Science:** PyTorch, TensorFlow, Keras, Scikit-learn, NLTK, spaCy, Gensim, Hugging Face Transformers, LangChain, OpenAI API, OpenCV, Computer Vision, Pandas, NumPy, Matplotlib

**Web Development:** ReactJS, Next.js, NodeJS, Angular, Tailwind CSS, GraphQL, RESTful APIs

**Cloud & DevOps:** AWS (EC2, S3, Lambda, Amplify, AppSync, DynamoDB, SQS), Azure OpenAI Service, Docker, CI/CD, Porter

**Databases & Tools:** PostgreSQL, MongoDB, Supabase, Git/GitHub, Gradio, Streamlit

## Education

**Vellore Institute of Technology, Vellore** Sept 2022 - July 2026  
B.Tech. in Information Technology **CGPA: 8.69/10**  
Relevant Coursework: Data Structures and Algorithms, Machine Learning, Deep Learning, Natural Language Processing, Software Engineering, Computer Vision, Databases, Operating Systems, Computer Networks, Statistics

## Work Experience

**Ekaant** May 2025 - August 2025  
*Software Development Engineer Intern*

- Built an **AI-powered employee wellbeing platform** with mood check-ins, quizzes, and therapy bookings; integrated **Azure OpenAI-powered chatbot** for personalized wellbeing insights and therapist recommendations, driving 35% increase in wellbeing scores.
- Developed an **HR analytics dashboard** with real-time wellbeing metrics by department and location, implementing **NLP-based sentiment analysis** for mood tracking and automated alerts for low engagement patterns.
- Engineered **full-stack application** using ReactJS and TypeScript frontend with PostgreSQL backend, integrating Microsoft Graph API for seamless organizational data sync and automated reporting workflows.
- Automated wellbeing tracking and reporting, saving 40% HR time through **RESTful APIs and serverless architecture**.
- Tech Stack:** ReactJS, TypeScript, NodeJS, PostgreSQL, Supabase, Azure OpenAI Service, Microsoft Graph API, Porter, Nodemailer

## Projects

**AI-Powered Recipe Generator** [↗](#) March 2025  
| Next.js, TypeScript, Google Cloud Vision API, Supabase, Tailwind CSS

- Developed **full-stack AI recipe platform** using Next.js and TypeScript, integrating **Google Cloud Vision API and Gemini API** for image-to-recipe generation, processing 50+ interactions per session with nutritional analysis.
- Implemented **secure authentication with Supabase Auth** (OTP verification), session management, and cloud storage for scalable data persistence.
- Designed **RESTful APIs** for recipe retrieval, favorites, ratings, and recommendations—optimizing PostgreSQL queries to reduce response time by 40%.

**SmartDoc Summarizer: Multimodal AI and RAG-powered PDF Analysis** [↗](#) March 2024  
| LangChain, RAG, NLP, PyTorch, OpenAI API, ChromaDB, Gradio

- Built **AI-driven PDF analysis platform** with multimodal processing of text, tables, and images, improving information retrieval efficiency by 60% using **NLP techniques (TF-IDF, Word2Vec, LDA)**.
- Implemented **RAG architecture with ChromaDB vector database** for contextual Q&A, achieving 40% better accuracy through semantic similarity matching and **transformer models (GPT-3.5, GPT-4)**.

**AquaScope: Smart Water Monitoring Platform** [↗](#) January 2025  
| Streamlit, Python, TensorFlow, CNN, OpenCV, Google Earth Engine, Sentinel-2

- Built full-stack web app enabling regional **water turbidity analysis via interactive maps**, increasing monitoring efficiency by 60% using **Google Earth Engine and Sentinel-2 satellite data** for real-time geospatial processing.
- Designed **underwater object detection module using CNN and OpenCV**, automating marine debris detection with 70% improved accuracy through **computer vision and transfer learning techniques**.

## Multimodal AI Assistant ↗

| PyTorch, LLaVA, Computer Vision, NLP, OpenAI Whisper, Gradio

October 2024

- Developed **real-time multimodal AI system** integrating computer vision, NLP, and speech processing; generated **image captions with LLaVA** (90% accuracy) and transcribed **multilingual audio via Whisper Seq2Seq model** (85% accuracy).
- Optimized large models with **4-bit quantization**, reducing GPU memory by 60% for real-time inference.

## Online Bookstore with AWS ↗

| AWS Amplify, React, Amazon Cognito, GraphQL, AWS Lambda, S3

October 2024

- Developed **cloud-native bookstore** using AWS Amplify and React with **Amazon Cognito authentication**; configured **S3 for static hosting** (40% faster load) and **AppSync GraphQL API with Lambda resolvers** (50% faster responses).

## Certifications

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- Machine Learning A-Z: AI, Python & R ↗
- Ultimate AWS Certified Solutions Architect Associate ↗

## Volunteering

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### RoboVision Event    March 2024 | VIT

As a core committee member at Robotics club, I led a session for 100+ participants on **Hand Gesture Recognition using Mediapipe**, covering palm detection and gesture recognition using **computer vision and machine learning**.

### Kartavya - Outreach Event    November 2023 | Local School

Volunteered at the "Kartavya" outreach event at Shrishti Vidyashram School, where we taught robotics concepts to 9th-grade students and showcased our projects to inspire interest in STEM education and hands-on learning.