
REE-INFINITY
TECHNOLOGIES

Executive Summary

Ree-Infinity Technologies is a multidisciplinary digital solutions provider, offering world-class expertise in **web and app design**, **financial consultation**, **social media strategy**, and **graphic design**. The company is driven by a commitment to innovation, clarity, and performance across all service domains.

We specialize in building intelligent, scalable systems that drive business growth through technology and creativity.

With deep expertise in **full-stack development** and **AI/ML engineering**, the company delivers high-performance web platforms, mobile applications, and automation tools tailored for modern business needs. Our solutions integrate cutting-edge technologies, custom architecture, and user-focused design — ensuring speed, reliability, and future readiness.

Ree-Infinity also brings strong capabilities in **NLP, OCR**, and intelligent automation — enabling smarter operations, better user experiences, and data-driven decisions. Our mobile apps, built using **Flutter & Riverpod**, provide robust, cross-platform performance with production-grade architecture.

From **IoT-enabled backends** to **AI-powered finance platforms**, Ree-Infinity Technologies empowers clients to scale faster, engage smarter, and operate more efficiently.

Ree-Infinity Technologies has successfully executed mission-critical projects — from mobile CRM platforms to AI-driven financial systems and IoT backends — all with a user-first mindset and deep technical expertise.

Ree-Infinity Technologies empowers businesses with intelligent management systems, AI-driven financial tools, and strategic consultancy. We optimize operations, enhance financial clarity, and deliver tailored digital solutions for sustainable growth.

We help organizations improve efficiency, transparency, and decision-making with tailored management solutions.

Driven by innovation. Powered by precision. Built for impact.

Our Team and Partners

Rishabh Varshney-

A technology leader with deep expertise in end-to-end app and web development, Rishabh Varshney drives the technical vision and execution at the core of our product innovation. With a proven ability to architect scalable digital solutions and lead cross-functional development teams, he brings both technical depth and strategic insight to the company's growth. Rishabh combines hands-on coding proficiency with leadership in emerging technologies, ensuring our platform is secure, performant, and future-ready.

Shubham Aggarwal-

Shubham Aggarwal is a core member of our technical team, specializing in building robust, efficient, and scalable digital solutions. With strong coding expertise and a problem-solving mindset, he plays a key role in turning product concepts into high-performance applications. Shubham is dedicated to clean code, seamless functionality, and continuous improvement—ensuring our technology runs smoothly and evolves with user needs.

Kshitij Sharma-

Kshitij Sharma brings a unique blend of creative design and digital marketing expertise to the team. As our visual storyteller and brand voice, he leads the design of compelling user interfaces and impactful marketing assets while managing our social media presence across platforms. With a keen eye for aesthetics and audience engagement, Kshitij ensures our brand is consistently represented with clarity, creativity, and strategic intent—driving user growth and community connection.

Syed Saquib Abbas-

Syed Saquib Abbas is the creative force behind our visual identity, bringing ideas to life through clean, modern, and user-centric design. With a strong foundation in graphic and UI/UX design, he crafts intuitive interfaces and engaging visuals that elevate the user experience and reinforce brand consistency. Saquib combines technical skill with artistic vision, ensuring every design element serves both form and function—supporting the product's impact and appeal.

Harsh Sharma-

Harsh Sharma brings deep expertise in cloud infrastructure and DevOps practices, specializing in Azure and AWS environments. He ensures our systems are scalable, secure, and highly available—supporting seamless deployment, automation, and performance optimization. With a strong command of cloud architecture and continuous integration/continuous deployment (CI/CD) pipelines, Harsh plays a critical role in accelerating development cycles and maintaining reliable, production-ready infrastructure.

Utkarsh Sharma-

Utkarsh Sharma is the operational backbone of the team, overseeing finance, client management, and service alignment with strategic precision. With a strong grasp of business infrastructure and execution, he ensures smooth internal operations while maintaining strong client relationships. Utkarsh excels at bridging business goals with day-to-day execution—optimizing resources, managing budgets, and delivering seamless client experiences that drive sustained growth.

VVSG and Associates (Strategic Finance & Compliance Partner)-

VVSG and Associates is a trusted partner in Accounting, Tax Preparation, Bookkeeping, and Payroll Services, with strong capabilities across the professional, scientific, and technical services landscape. With a reputation for accuracy, regulatory expertise, and strategic financial guidance, they play a vital role in maintaining our operational integrity and fiscal discipline. Their support ensures precise financial reporting, seamless compliance, and efficient payroll management.

Meanwhile, they help us provide enhanced consultancy to our clients—enabling smarter decision-making, optimized financial planning, and long-term business growth.

Technical Stack

Frontend Development

- **Web:** React.js, Next.js, HTML5, CSS3, Tailwind CSS, Ant Design, Bootstrap
- **State Management:** Redux, Context API, Zustand
- **Mobile:** Flutter, Riverpod, Provider, Dart, React Native (exploration)
- **UI Libraries:** ShadCN, Material UI, Framer Motion

Backend Development

- **Languages & Frameworks:** JS, TS, GoLang, Erlang, Python, Dart, Java, C++, Node.js, Express.js, FastAPI, Django, Flask, Spring Boot
- **Authentication & AuthZ:** JWT, OAuth2, Firebase Auth, Passport.js

Databases & Storage

- **NoSQL & SQL:** MongoDB, PostgreSQL, MySQL, Firebase Firestore & Realtime DB
- **Caching & Queues:** Redis, RabbitMQ, Kafka (exploration)
- **File Storage:** AWS S3, Cloudinary, Firebase Storage

AI / Machine Learning

- **Core ML:** Scikit-learn, TensorFlow, PyTorch (basic)
- **NLP:** RASA (NLP Framework), spaCy, NLTK
- **OCR & Vision:** Tesseract OCR, OpenCV
- **Text Summarization / Ranking:** TextRank, Gensim
- **Recommendation Systems:** Content-based filtering, Rule-based models

IoT & Hardware Integration

- **Microcontrollers:** Arduino, Raspberry Pi
- **Protocols & Brokers:** MQTT (Mosquitto), HTTP, WebSockets
- **Applications:** Smart home control, RFID-based attendance, sensor data collection

DevOps & Deployment

- **Containers & Orchestration:** Docker, Docker Compose, Kubernetes (exploration)

- **CI/CD & Hosting:** GitHub Actions, Vercel, Render, Netlify
- **Cloud Services:** AWS EC2, AWS S3, Firebase, Google Cloud Platform
- **Monitoring & Logs:** PM2, LogDNA, CronJobs, custom health checks

Tools & Utilities

- Git, GitHub, GitLab, Postman, Thunder Client, VSCode
- RESTful APIs, Webhooks, Swagger (API Docs), JSON Schema
- Figma, Canva, Notion, Trello, Slack, Discord (Team Ops)

Core Strengths

- Building modular, optimized systems without heavy reliance on external packages.
- Strong analytical and problem-solving mindset with real-world product impact.
- Ownership-focused — managing and completing complex projects solo or in a team.
- Efficient time and task management with consistent on-time delivery.
- Leading and mentoring teams across tech stacks and domains.
- Full-stack capability: frontend, backend, mobile, AI/ML, IoT, DevOps.
- Fast learner with ability to adapt to new technologies and business needs.
- Obsession with code quality, system performance, and seamless user experience.

Project: Call CRM — Scalable Cloud and SIM-Based Call Management System

Overview

Call CRM is a high-performance call tracking and management CRM designed for enterprises of all sizes, especially outbound sales and telecalling teams. The platform integrates GSM SIM-based calling and VoIP functionality to manage customer interactions at scale. With features like AI-powered call analytics,

auto-dialing, interaction logging, and real-time reporting, Call CRM enables sales teams to operate more efficiently, track every customer interaction, and measure team performance through a unified interface.

It functions as a complete ecosystem—combining CRM workflows with secure, real-time telephony—available across Android, iOS, web, and tablet platforms.

Technology Stack

Frontend & Cross-Platform Development

- Flutter, Dart
- Riverpod, Provider (State Management)
- Native Android (Java), Native iOS (Swift)
- Responsive Web (Flutter Web)

Backend & APIs

- Node.js, TypeScript
- Express.js
- Firebase (Realtime & Firestore), Firebase Cloud Functions
- MongoDB
- AWS Lambda, S3, EC2

AI/ML & Analytics

- Gemini (for sentiment analysis and call classification)
- Firebase Analytics
- Custom NLP pipelines for entity and intent detection in calls

Telephony & Audio

- VoIP integration for cloud-based internet calling
- GSM SIM integration for native device calling
- FFmpeg for audio compression and optimization
- Custom-built iOS call tracking module (workaround for iOS restrictions)

Integrations

- Zoho CRM, Shopify, WhatsApp Business, Gmail, Outlook, and other CRM/HRMS systems

- OAuth and secure webhook-based integrations for seamless third-party sync

Core Features

1. Unified Call Management System

- Tracks and manages inbound/outbound calls via both SIM and VoIP.
- Automatically logs call details, including duration, time, contact name, and interaction metadata.

2. AI-Powered Call Analysis

- Implements post-call analysis to detect conversation tone, success/failure status, intent resolution, and customer sentiment.
- Summarizes call insights on performance dashboards for each team member.

3. Multi-Platform Accessibility

- Built with a single Flutter codebase, ensuring availability on Android, iOS, web, and tablet with responsive layouts and native performance.

4. Team & User Management

- Role-based access control with admin-level management of sales agents, field agents, and telecallers.
- Live team tracking and productivity dashboards.

5. Audio Recording & Optimization

- Every call is recorded, compressed, and securely stored using FFmpeg to reduce latency and data usage.
- Playback support for reviewing past interactions.

6. Auto Dialer & Contact Scheduler

- Enables bulk calling via auto-dialing lists.
- Schedules follow-up calls, meetings, and alerts based on conversation context.

7. CRM Dashboard & Interaction History

- Detailed interaction history, contact data, and user-defined fields stored in the CRM.
- Real-time insights into contact engagement, response quality, and conversion rates.

8. Crash-Free and High-Performance

- Firebase Crashlytics and Performance Monitoring integrated to maintain app reliability at scale.
- Optimized app size and performance through custom packages (avoiding bloated third-party libraries).

9. Cloud Telephony Integration

- VoIP infrastructure enables secure internet-based calling with number masking.
- Empowers remote and international calling without disclosing user phone numbers.

10. Advanced Third-Party Integrations

- Native integration with popular enterprise tools, ensuring a connected ecosystem.
- Syncs emails, calendars, client data, and customer histories across platforms.

Contributions & Responsibilities

- Spearheaded the **custom iOS call tracking system**, overcoming native limitations to ensure parity with Android.
- Designed and implemented major modules across mobile and web apps using Flutter and Riverpod.
- Engineered audio pipeline using **FFmpeg** for efficient recording and storage of calls.
- Built integrations with **Gemini AI** for automated sentiment and conversation analysis.
- Played a key role in **optimizing app size and performance** by developing internal packages and removing external dependencies.

- Contributed to API design, state architecture, and real-time syncing features across devices and platforms.
- Collaborated closely with a team of 15–20 engineers, managing timelines, code reviews, and deployment workflows.

Challenges Solved

- **iOS Restrictions:** Developed an innovative solution for call tracking on iOS where no official support exists.
- **Performance Bottlenecks:** Reduced build size and improved app responsiveness by avoiding heavy packages and using custom-built solutions.
- **Scalability:** Architected the system to support thousands of users concurrently across platforms with minimal latency.
- **Data Integrity & Sync:** Ensured real-time syncing of call and CRM data, with no loss or duplication even in edge cases.
- **Enterprise Readiness:** Delivered a full-fledged, enterprise-ready CRM with modular integrations and real-time analytics, suitable for a wide range of business use cases.

Business Impact

- Reduced manual effort and call tracking friction by over **60%**, saving significant agent time.
- Increased agent productivity through actionable AI insights and performance scores.
- Helped organizations increase **contact success rates up to 78%**.
- Enabled better team oversight with live dashboards and real-time CRM integration.
- Provided full customer interaction visibility and call intelligence, improving decision-making and client servicing.

Charging Management System for Electric Vehicles

Overview:
Developed a comprehensive, multi-platform EV Charging Management System tailored for the U.S. market. The solution comprises four interconnected modules:

- **Customer Mobile Application:** Enables EV users to discover charging stations via an interactive map, initiate charging sessions, make digital payments, and track session progress without human intervention.
- **Charging Station Dashboard:** Allows station operators to manage charger uptime, monitor charging sessions, hardware diagnostics, and access performance reports.
- **Distributor Panel:** Facilitates the management of multiple stations, financial analytics, hardware monitoring, and team coordination.
- **Super Admin Panel:** Grants complete system-level control including user roles, operational insights, station health, revenue analytics, and platform-wide configurations.

Technical Architecture

- **Backend Technologies:**
  - **Golang (Gin):** Lightweight, high-performance RESTful APIs.
  - **Erlang/OTP:** Asynchronous messaging engine to implement OCPP (Open Charge Point Protocol) for charger-server communication.
  - **Redis:** In-memory data store for real-time caching and socket communication.
  - **MongoDB:** NoSQL database for flexible schema design and high availability of station and session data.
- **Frontend Technologies:**
  - **React.js:** Web interfaces for Admin, Distributor, and Station dashboards with real-time updates.
  - **React Native:** Cross-platform mobile application with native integrations for Android and iOS.
- **DevOps & Infrastructure:**
  - **Docker & Kubernetes:** Containerized microservices architecture for modular development and horizontal scalability.
  - **AWS (ECS, S3, Lambda, API Gateway, CloudWatch):** Cloud-native deployment and observability tools for monitoring, storage, and API orchestration.

    - **GitHub Actions & AWS CodePipeline:** Automated CI/CD for seamless testing, deployment, and version management.
- **Additional Tools & Services:**
    - **Firebase Analytics & Crashlytics:** Application usage insights and crash reporting.
    - **Stripe & UPI Integrations:** Secured payment gateways for digital transactions.
    - **OCPP 1.6 & 2.0 Implementation:** Real-time communication standard between EV chargers and backend.

Core Features

- **OCPP Protocol Integration (1.6/2.0):** Enabled live communication between charging stations and backend with sub-second latency using Erlang.
- **Live Charging Status Monitoring:** Customers can view in real-time how much charge has been delivered, duration, power consumption, and estimated cost.
- **Interactive Map-Based Station Locator:** Integrated GPS-based location services to help users find the nearest available charger.
- **One-Tap Charging:** Complete zero-human interaction — users scan QR code or tap on a charger on the map to start charging.
- **Dynamic Pricing & Billing Engine:** Pricing adjusted based on usage time, power consumption, and demand.
- **Revenue and Uptime Analytics:** For both station owners and distributors, with time-based filters and performance charts.
- **Role-Based Access Control (RBAC):** Secure user permissions for different entities — admin, distributor, operator, customer.
- **Multi-Tier Microservices Architecture:** Independent services for payments, session tracking, reporting, messaging, and user management.
- **Fault Detection & Alerts:** Live error and downtime notifications to operators via integrated messaging queues.
- **Offline Mode for Stations:** In case of network drop, charging stations can operate offline and sync data once connectivity resumes.
- **Payment Gateway Integration:** Secure payment processing via Stripe and UPI-based methods.
- **Highly Scalable Infrastructure:** Optimized to support thousands of concurrent charging sessions.

Role & Responsibilities

- Led a cross-functional team of 10 members including backend engineers, mobile developers, frontend developers, and DevOps professionals.
- Designed and implemented the multi-service backend architecture and OCPP communication engine using Erlang.
- Developed core modules in Go, including session tracking, billing, access control, and integration points with the mobile application.
- Built automated deployment pipelines using GitHub Actions and AWS CodePipeline to ensure production reliability and rollback capabilities.
- Created scalable microservice architecture and established coding, security, and documentation standards across the team.

Key Technical & Operational Challenges

- **Low-Latency Charger Communication:** Developed a fault-tolerant socket infrastructure using Erlang to maintain persistent low-latency communication with hundreds of concurrent charging points.
- **OCPP Protocol Adaptation:** Custom-built support for OCPP 1.6 and 2.0, ensuring compatibility with varied hardware vendors across geographies.
- **Microservice Orchestration:** Managed distributed services and handled inter-service communication, session state sharing, and API aggregation without impacting response times.
- **App Optimization Across Platforms:** Balanced real-time updates, battery usage, and UI responsiveness on Android, iOS, and web applications.
- **Distributor-Specific Data Segmentation:** Architected data isolation mechanisms for security and privacy between multiple distributors.

Business Impact

- Reduced manual operation dependency at charging stations by over 95% through end-to-end automation.
- Enabled high-availability infrastructure that supported over 100 distributed charging stations with minimal downtime (<0.1%).
- Achieved sub-500ms average latency in charger-to-cloud communication, improving the real-time reliability of sessions.
- Delivered a seamless user experience for over 5,000 monthly active users within the first six months of launch.

- Facilitated distributor growth with centralized analytics and revenue insights, leading to a 40% improvement in station utilization.

Potential Future Enhancements

- **Smart Grid Integration:** Coordinate charging sessions with grid load and renewable energy availability for peak shaving.
- **Predictive Maintenance using AI:** Analyze charger data logs to forecast hardware failure and schedule preemptive service.
- **EV Fleet Support:** Introduce account-based fleet management tools for logistics companies and large-scale EV deployments.
- **Carbon Emission Dashboard:** Visualize total carbon offsets and environmental impact to promote sustainability.
- **Voice and Vehicle Assistant Integration:** Add Alexa, Google Assistant, and Apple CarPlay compatibility for easier access.
- **Dynamic Reservations & Queuing System:** Enable time-slot based reservations with queue management during high-demand periods.

E-commerce Platform with AI Chatbot & Price Intelligence Scraper (UAE-Focused)

Project Overview:

This multi-functional web application was developed to serve as a comprehensive electronics marketplace tailored for the UAE region, enabling users to **sell, buy, and repair** electronic products through a single platform. To enhance customer engagement and streamline operations, the platform also includes a powerful AI-driven chatbot and an intelligent web scraping engine.

The goal was to create a **smart, secure, and scalable ecosystem** that bridges the gap between sellers and buyers, while reducing e-waste by encouraging product repairs. Additionally, by integrating a price intelligence system, the

platform ensures customers always receive the most competitive pricing in the market.

Core Features:

E-commerce Platform

- **Three Functional Modules:**
  - **Buy**: Users can browse and purchase electronics with verified pricing.
  - **Sell**: Individuals and merchants can register and list their products for sale.
  - **Repair**: Customers can book appointments to repair their gadgets.
- **Book Buying & Selling:** Based on the **ASIN number**, the system auto-fetches complete book details, enabling easy listing with accurate pricing.
- **Multi-platform Access:** Built as a **responsive web app**, ensuring accessibility across devices.

AI-Powered Chatbot (RASA NLP)

- Used to **enhance user experience and automate support**.

- Users can:
  - Ask for **buy/sell/repair prices** of electronics.
  - **Set appointments** for repair services without human interaction.
  - Get **real-time updates** and support regarding their listings or purchases.
- Contextual NLP-based responses ensure natural conversations and improved user satisfaction.

Price Intelligence Web Scraper

- Built to compare and fetch prices from **top e-commerce platforms** like **Amazon UAE, Noon, and Cartlow**.
- **Custom-built proxy rotation**, user-agent spoofing, and header rotation ensure secure, anonymous, and high-speed scraping.
- Enhanced with **multi-threading**, enabling the scraping of **10,000+ entries per week**.

Tech Stack & Architecture:

Frontend

- Developed using **Odoo Web** framework and custom JS for frontend customization.

Backend

- **Node.js**: For API orchestration and server logic.
- **Python**: For building scrapers and AI chatbot logic.
- **PostgreSQL**: Core database for Odoo ERP integration.
- **MongoDB**: Used for storing unstructured or semi-structured scraped product data.

AI & Automation

- **RASA** (Natural Language Processing): For building and deploying the AI-powered chatbot.
- **Custom Proxy Middleware**: Designed in Python for scraping safely and efficiently.

DevOps & Infrastructure

- **Docker** & **Docker Compose**: Containerized architecture for easy deployment.
- **AWS**: For cloud infrastructure, deployment, and scalability.
- **CI/CD** pipelines using GitHub Actions for seamless updates and environment consistency.

Leadership & Responsibilities:

- **Role**: Full Stack Lead Developer & Technical Project Manager
- **Team Size**: 5 developers (frontend, backend, AI, and data specialists)
- **Responsibilities**:
    - Architected the system from the ground up
    - Built and optimized the custom scraping engine
    - Led chatbot integration using RASA
    - Oversaw deployment, performance monitoring, and code reviews

- Ensured cross-functional coordination between scraping, AI, and web teams

Impact & Value Delivered:

- **Reduced E-Waste**: By encouraging product repairs and reusability, it contributed to sustainable tech use.
- **Increased Buyer Confidence**: Through real-time price comparison, users consistently got the best market value.
- **Enhanced User Experience**: The AI chatbot enabled faster query resolution and improved user satisfaction.
- **Automated Workflow**: From listing to price comparison to repair booking, all processes were streamlined.
- **Vendor Empowerment**: Sellers could manage listings, track analytics, and engage customers from a unified dashboard.
- **Scalable Architecture**: Built to support **thousands of users** simultaneously with future-ready modular microservices.

Challenges and Solutions

Technical Challenges:

1. **Scalability of Scraping Infrastructure**
   - **Challenge**: Managing scraping at scale (10,000+ records weekly) without getting IP blocked.
   - **Solution**: Developed a custom proxy and header rotation mechanism and implemented threading for faster, safer, and scalable scraping.
2. **Multifunctional Platform Complexity**
   - **Challenge**: Integrating buy, sell, and repair workflows while maintaining performance and responsiveness.
   - **Solution**: Used a modular architecture with role-based access, optimized database indexing, and asynchronous task handling.
3. **Chatbot NLP Accuracy**
   - **Challenge**: Ensuring chatbot can understand diverse customer intents like booking repairs, price queries, etc.

    - **Solution**: Trained RASA NLP models with extensive domain-specific intents and integrated fallback strategies to route uncertain queries to human agents.
4. **ASIN-Based Book Information Retrieval**
    - **Challenge**: Parsing and scraping relevant data using only ASIN, with real-time pricing updates.
    - **Solution**: Built ASIN-specific scraping pipelines with dynamic selectors and fallback content handlers for unavailable listings.
5. **Security and Performance**
    - **Challenge**: Managing user data securely and ensuring optimal app performance.
    - **Solution**: Applied OAuth-based authentication, encrypted storage, and used load balancing and caching with Docker + AWS deployments.

Future Scope Enhancements

1. **AI-Based Product and Repair Recommendations**
   Implement machine learning to personalize recommendations based on user behavior, past purchases, and product condition.
2. **Real-time Price Alerts and Historical Trends**
   Allow users to set price alerts and view historical price trends on electronics and books.
3. **Mobile App Integration with Native Features**
   Launch a full-featured mobile app with biometric login, order tracking, and push notifications.
4. **Vendor and Admin Analytics Dashboard**
   Create role-based dashboards with advanced business intelligence features for sellers and admins to monitor sales, engagement, and ROI.
5. **E-waste Recycling and Pickup Module**
   Add a feature to schedule e-waste pickups, promoting sustainability by encouraging recycling of unsellable or non-repairable items.

Project: Rupin – Home Automation System

Overview

Rupin is a robust home automation system designed to revolutionize how users interact with home appliances. Built for both residential and commercial use, it allows users to control IoT-enabled devices from anywhere within the home—or remotely—via a mobile application. By integrating motion sensors and MQTT-based communication, Rupin delivers a seamless, secure, and intelligent automation experience.

Key Features

- **Complete IoT Device Control**: Control major home appliances (TV, microwave, air conditioner, fridge, shower, lights, fans, etc.) using a single mobile interface.
- **MQTT Protocol Integration**: Utilizes lightweight MQTT messaging protocol for real-time bidirectional communication between devices and the mobile application.
- **Device Grouping and Room Structuring**: Devices can be grouped by rooms, and rooms can be organized per home or office. This enhances scalability and simplifies access control.
- **User Roles and Access Management**: Admin users (e.g., homeowners) can assign device/room-level access to other users, allowing family members or office staff to control only specific appliances.
- **Motion Sensor Integration**: Enhanced automation through PIR sensors that can trigger actions like turning on lights or AC when movement is detected.
- **Webhook-Based Secure Communication**: Ensures secure and responsive communication between IoT devices and cloud systems using webhook callbacks.
- **High Uptime and Reliability**: System designed to maintain a **99.9% uptime**, with redundancy in message delivery and fallback logic.
- **Custom Automation Routines**: Users can define custom routines or schedules (e.g., turn off all devices at night or activate “office mode” in the morning).
- **Real-Time Monitoring & Logs**: Live status monitoring of all appliances with logs of recent activities for diagnostics and usage analysis.

Tech Stack

- **Backend**: Node.js, Express.js
- **Mobile App**: React Native
- **Database**: MongoDB (for user/device/room management)
- **IoT Protocol**: MQTT (Mosquitto Broker and Client libraries)
- **Cloud & Infrastructure**: AWS (EC2 for hosting, IoT Core for extended MQTT services, Lambda for serverless automation)
- **Security & Communication**: Webhooks, JWT Auth, TLS encryption for MQTT
- **Other Tools**: GitHub for version control, Postman for API testing, Docker for containerization

Your Role

- Designed and implemented the **backend architecture** using Node.js and MongoDB.
- Developed the **React Native mobile application** for Android and iOS platforms.
- Built the **MQTT-based communication layer**, including message handlers and state synchronization.
- Integrated AWS services for hosting, monitoring, and alerting.
- Architected **role-based access control** for device management and user privileges.
- Led testing and optimization of **real-time MQTT messaging** for low-latency device interaction.

Challenges & Solutions

- **Challenge**: Ensuring real-time, low-latency communication for multiple concurrent users.
    - **Solution**: Leveraged MQTT protocol with Quality of Service (QoS) levels to guarantee message delivery even under network disruptions.
- **Challenge**: Lack of uniform device standards (varied IoT sockets and sensors).
    - **Solution**: Abstracted hardware control using a modular driver interface for different device types.

- **Challenge**: Managing access rights for shared environments like offices or homes with multiple users.
    - **Solution**: Implemented a hierarchical permission model that supports owner, admin, and guest roles per device and room.
- **Challenge**: Preventing unauthorized access to connected home appliances.
    - **Solution**: Used end-to-end TLS encryption for MQTT and token-based authentication at all API endpoints.
- **Challenge**: Handling offline scenarios and device unavailability.
    - **Solution**: Added offline handling and local queueing of commands with retry strategies.

Impact

- Enabled **complete smart home control** via mobile, enhancing comfort and accessibility for residents.
- Improved **home safety and energy efficiency** by enabling automation and intelligent triggers (e.g., motion-based light control).
- Facilitated the adoption of **smart living** in both domestic and commercial settings with scalable, modular infrastructure.
- Enhanced **usability and control granularity**, especially in multi-user households and offices.
- Achieved a **significant improvement in lifestyle** through digital transformation of everyday household functions.

Future Scope

1. **Integration with Smart Assistants**: Google Home, Amazon Alexa, and Siri for voice-based control.
2. **Energy Consumption Analytics**: Real-time insights and predictive analytics for reducing power consumption and cost.
3. **Geo-fencing and Location-Based Automation**: Automatically perform actions based on user proximity to home (e.g., turn on AC when 2 km away).
4. **IFTTT Integration**: Allow users to build custom routines by integrating with third-party services and applications.
5. **OTA Firmware Updates**: Enable over-the-air updates for connected devices to fix bugs or add features without user intervention.

Project: Attendify – AI-Based Face Recognition Attendance System

Overview

Attendify is an AI-powered desktop attendance system designed to automate attendance tracking in colleges, universities, and corporate offices using **real-time face recognition** from CCTV or IP security cameras. The application ensures seamless and non-intrusive attendance marking by identifying registered individuals with high accuracy, eliminating manual processes, and enhancing institutional security and productivity.

This smart attendance system bridges traditional attendance systems with modern AI-driven automation, leveraging computer vision and edge AI for real-time insights, monitoring, and reporting.

Key Features

- **Real-time Face Recognition via Security Cameras**:
  Live video feeds from security cameras are processed to identify and mark attendance of registered users using pre-trained face embeddings.
- **Automated Attendance Marking**:
  Faces are continuously matched against the registered database. Once a match is detected and confirmed based on time thresholds, attendance is automatically marked.
- **Intruder Detection**:
  If an unregistered face is detected, the system logs it with a timestamp and location, enabling enhanced security alerts for unknown individuals.

- **Advanced Student/Employee Registration Module**:
  The system allows admins to register classes, students, and their facial embeddings in advance.
- **Analytics and Reports**:
  Generates detailed reports in **Excel and PDF formats**, including:
  - Attendance summary by day/week/month
  - Time of entry and exit
  - Percentage of presence
  - Historical logs of intruders/unrecognized individuals
- **Desktop Application with Web Interface**:
  The software runs on desktop systems with a lightweight **React.js-based** interface for web dashboard access and app download support.
- **Multi-Camera Support**:
  Simultaneously connects and processes feeds from multiple cameras installed across various rooms or premises.
- **Role-Based Access**:
  Role management system for administrators, supervisors, and department heads for customized access levels.
- **Offline Mode with Sync**:
  Attendance can still be captured if the system goes offline and automatically synced when reconnected.

Tech Stack

- **Languages & Frameworks**:
  Python, JavaScript (React.js), PyQt5 (for desktop GUI)
- **Machine Learning & AI Libraries**:
  - `face_recognition` (based on dlib and ResNet models)
  - Hugging Face Transformers (used for facial feature enhancement and secondary model evaluations)
  - OpenCV (for live camera feeds and image pre-processing)
  - NumPy, Pandas (for data processing and reporting)
- **Database & Reporting**:
  - SQLite for local storage
  - ExcelWriter (via Pandas) and ReportLab (for PDFs)
- **Security & Performance**:
  - Camera feed access via RTSP
  - Local and encrypted face embedding storage

    - Multi-threaded video frame processing for real-time response

Role & Contribution

Led a **team of 4 developers** in designing and implementing the full system, from backend development and model integration to UI design and deployment. Personally handled:

- Face recognition logic and model tuning
- Security camera integration
- Attendance tracking algorithms
- Report generation module
- Desktop packaging and deployment flow

Challenges & Solutions

- **Challenge 1: Heterogeneous Camera Network Integration**
    - **Issue**: Security cameras across buildings were on isolated or private subnets.
    - **Solution**: Developed a network mapping tool using custom RTSP discovery and manually configured streaming endpoints with a fallback proxy server.
- **Challenge 2: Real-Time Face Matching Accuracy**
    - **Issue**: Live video introduces motion blur and lighting issues.
    - **Solution**: Introduced frame stabilization with image preprocessing (contrast enhancement, histogram equalization) before passing it to the model.
- **Challenge 3: High CPU Usage for Continuous Video Processing**
    - **Solution**: Implemented smart frame sampling (1 frame/sec) with motion-triggered face detection using background subtraction, drastically reducing compute usage.
- **Challenge 4: Dataset Creation for Faces**
    - **Solution**: Automated face dataset creation tool using webcam/selfies with live feedback on image quality to ensure accuracy.
- **Challenge 5: Multi-Platform Support**

- **Solution**: Used `PyInstaller` to package the app for Windows and Linux, and created a web-based monitoring panel using React.js for remote access.

Impact

- **Automated Attendance at Scale**:
  Reduced time spent on manual attendance in educational institutes and organizations by over 90%.
- **Increased Security**:
  By logging and alerting unrecognized individuals, the system added an additional layer of campus/building security.
- **High Accuracy & Real-Time Monitoring**:
  Achieved **~80% recognition accuracy**, with performance tuning in low-light and cluttered conditions.
- **Operational Efficiency**:
  Real-time data logging, analytics, and admin dashboards improved attendance transparency and minimized proxies or manual errors.

Future Scope

1. **Facial Emotion & Engagement Detection**
   Monitor student/employee attentiveness and emotional state during classes or meetings for deeper behavioral analytics.
2. **Liveness Detection (Anti-Spoofing)**
   Integrate anti-spoofing measures to prevent face spoofing via images or video replays.
3. **Integration with Access Control Systems**
   Sync with door locks or gates to restrict access to unauthorized or absent individuals.
4. **Cloud-Based Centralized Dashboard**
   Deploy a centralized admin panel on cloud to monitor multiple institutions/branches in real time.
5. **Mobile Companion App**
   For teachers/admins to get real-time reports, approve attendance manually in exceptional cases, and push alerts.

Project: SummarEase – AI-Powered Text Summarization Tool

Purpose

SummarEase is a smart summarization web application that leverages advanced Natural Language Processing (NLP) techniques to generate **context-aware, accurate, and length-customizable summaries** from lengthy articles and web pages. It is designed to save users' time by providing concise yet meaningful insights from large bodies of content — especially useful for students, researchers, and professionals consuming data-intensive blogs, research papers, or tech articles.

Key Features

- **TextRank Algorithm Implementation**: Utilized the TextRank graph-based ranking algorithm for extractive summarization, achieving over **85% accuracy** in preserving contextual relevance.
- **Custom Summary Lengths**: Users can dynamically select summary lengths (e.g., short, medium, long) depending on their needs.
- **Web Page Summarization**: Extracts and summarizes content from platforms like **GeeksForGeeks, Medium, Wikipedia**, and other technical blogs using smart HTML parsing.
- **Context-Preserving Logic**: Integrated semantic similarity checks using **Hugging Face transformer models** to avoid out-of-context or redundant summaries.
- **URL-Based Summarization**: Users can input a webpage URL, and the tool automatically fetches and summarizes the content.
- **Multilingual Capabilities** *(Experimental)*: Initial setup to handle content in **multiple languages**, aiming for broader user inclusivity.
- **Clean Web UI**: Developed an intuitive, mobile-responsive frontend interface that allows users to paste text or provide links for instant summarization.
- **Performance Monitoring**: Integrated backend logging and lightweight analytics for tracking summarization performance, accuracy, and usage patterns.
- **Export Options**: Ability to download summaries in **PDF or TXT formats** for offline usage.

- **Real-Time AI Pipeline**: Optimized inference speed and reliability with efficient preprocessing and postprocessing using **Flask microservices**.

Tech Stack

- **Backend**: Python, Flask, NLP pipelines, REST APIs
- **Frontend**: HTML5, Tailwind CSS, JavaScript (React optional)
- **AI/NLP**: Hugging Face Transformers, NLTK, SpaCy, TextRank, Pandas, NumPy
- **Database**: MongoDB (for user summaries and logging history)
- **Deployment**: Vercel (Frontend), GitHub Actions (CI/CD), Render/AWS EC2 (Backend)
- **Other Tools**: BeautifulSoup, Requests (for scraping), PyPDF2 (for exporting), GitHub (for version control)

Your Role

- **Project Lead & Full-Stack AI Developer**:
  Led a team of 3, overseeing the **entire development lifecycle**, from data pipeline design to frontend deployment. Personally handled the **NLP integration**, **Flask API development**, and **HTML scraping module**.

Challenges & Solutions

- **Challenge**: Maintaining contextual accuracy in summaries from inconsistent HTML structures across blogs.
  Solution: Built custom scraper logic with fallback handlers and tag-weight prioritization for robust parsing.
- **Challenge**: Scaling the NLP model inference for high traffic without latency.
  Solution: Implemented lightweight pipelines and summary caching using Redis (planned for future).
- **Challenge**: Ensuring summarization quality for technical content vs. generic blogs.
  Solution: Combined extractive summarization with semantic sentence ranking using transformer embeddings.

- **Challenge**: Clean UI rendering and preserving formatting post-summary.
  Solution: Used markdown and custom text formatters to keep summaries readable and aesthetically consistent.

Impact

- Significantly reduced reading time for long articles by up to **70%**, increasing productivity and focus.
- Enhanced **student research workflow** by enabling instant article digests.
- Attracted early users from **academic forums** and **developer communities**, validating its value in real-world applications.
- Enabled **AI-based decision-making** for knowledge workers by extracting only the most critical parts of dense content.

Future Scope

1. **Integrate Abstractive Summarization Models** like BART or T5 for human-like summary generation.
2. **User Authentication & History Tracking** for saved summaries, export history, and sharing.
3. **Browser Extension** to summarize articles directly from any tab.
4. **Voice Summary Generation** using TTS (Text-to-Speech) for accessibility.
5. **Multi-Document Summarization** for comparing and condensing multiple sources at once.

Project Name: Finaccru – Advanced Accounting Software

Purpose:

Developed a full-featured accounting platform tailored for UAE-based businesses with a unique hierarchical access model (Jr. and Sr. accountants) not present in conventional tools like Zoho Books. The goal was to streamline

accounting workflows, reduce manual efforts, and foster real-time collaboration between clients and accountants.

Key Features:

- **OCR-Powered Document Processing**: Enabled automated data extraction from scanned receipts, invoices, and financial documents using OCR, improving data entry efficiency by **60%**.
- **Role-Based Access Control**: Introduced a **hierarchical structure** for **Jr. and Sr. accountants**, allowing task assignment, approval flows, and accountability within the accounting process.
- **Invoice & Bill Management**:
    - Create, view, and export tax invoices and bills.
    - Convert bills into **credit/debit notes** with contextual tracking.
- **Real-Time Chat System**:
    - Enabled direct communication between **clients, accountants, and admin** for clarification and approval.
    - Ensured better audit trails and faster resolution of issues.
- **Admin Dashboard**:
    - Monitor performance and actions of Jr. and Sr. accountants.
    - Manage approval flows for critical accounting operations.
- **Custom PDF Rendering Engine**:
    - Precisely replicated UI-based invoice layouts into downloadable PDFs
    - Handled dynamic components like tax rules, currency formatting, and regional compliance.
- **Clean, Modern UI/UX**:
    - Designed with scalability in mind, responsive across devices.
    - Streamlined workflows to reduce user friction and improve accessibility.
- **Smart Filters & Search**: Powerful querying system for invoices, users, and transactions.
- **Audit Logs**: Transparent history of all financial and operational changes for compliance.
- **Multi-Tenant Structure**: Allowed multiple companies to onboard and use the platform with full isolation.

Tech Stack:

- **Frontend**: React.js, Redux (state management)
- **Backend/API**: Python (Flask/FastAPI)
- **Authentication & Messaging**: Firebase Auth, Firebase Realtime DB (for chat)
- **Database**: SQL (PostgreSQL), Firebase (NoSQL for real-time communication)
- **DevOps**: AWS EC2, S3, Lambda (for document processing)
- **PDF Generation**: Custom React-based PDF renderer
- **Third-party Services**: OCR libraries (Tesseract, EasyOCR), Currency conversion APIs

Role:

Led a team of **4 developers**, coordinated frontend and backend integrations, designed the invoice processing flow, and built the custom PDF rendering logic. Maintained close client communication to meet business-specific tax and accounting requirements.

Challenges & Solutions:

- **PDF Rendering Accuracy**:
    - *Challenge*: Replicating the UI invoice design exactly in PDF format, with responsive layouts and RTL support.
    - *Solution*: Created a **custom PDF rendering engine in React**, bypassing traditional HTML-to-PDF libraries for higher precision.
- **Real-Time Chat Integration**:
    - *Challenge*: Building a scalable, secure, real-time communication system.
    - *Solution*: Used **Firebase Realtime DB** with role-based access and end-to-end encryption.
- **Hierarchical Role Enforcement**:
    - *Challenge*: Implementing secure and flexible task delegation between Jr. and Sr. accountants.
    - *Solution*: Designed a **permission matrix** with clear escalation paths and override capabilities.
- **Handling Complex Invoice Formats**:
    - *Challenge*: Parsing scanned invoices with inconsistent layouts and different tax schemes.

- *Solution*: Integrated **AI-based OCR pipelines** with region-specific rule engines.

Impact:

- Reduced **manual entry and processing time by 30%**.
- Increased transparency and traceability across all accounting workflows.
- Enabled **multi-level accountant collaboration**, improving approval turnaround by 40%.
- Boosted client trust with real-time support and personalized interaction through in-app chat.
- Significantly reduced human error through automation and verification steps.

Future Scope:

1. **AI-Based Anomaly Detection**: Automatically detect fraudulent or inconsistent entries across financial documents.
2. **Auto-Categorization of Transactions**: Using ML to classify expenses and revenues by type and client.
3. **Integration with Banks & Tax Portals**: Auto-fetch bank statements and submit tax returns via APIs.
4. **Voice-to-Text Entry**: Add financial entries via voice commands with NLP processing.
5. **Mobile App Expansion**: A companion app for accountants on the move, with push notifications and on-the-go approvals.

Project Name: Doodhwala – Dairy E-Commerce Platform

Purpose:

Doodhwala was built as a comprehensive e-commerce platform to modernize the distribution and sale of dairy products. The system allows users to **purchase milk and related products** through **direct purchases**, **subscription models (monthly/weekly)**, or **trial plans (3-day trials)**. The goal was to support dairy businesses in digitizing their operations while offering a **customer-centric**, seamless experience for end-users.

Key Features:

1. E-Commerce and Subscription Engine

- **Multi-model Sales**:
    - **Direct Purchase**: One-time orders of dairy products.
    - **Monthly/Weekly Subscriptions**: Automated recurring delivery of items like milk, ghee, curd.
    - **Trial Products**: New users can try products via a 3-day trial plan to improve conversion rate.
- **Product Variants & Categories**:
    - Supports multiple product types with customizable quantity, fat content (e.g., full cream, toned milk), and vendor details.
- **Smart Cart & Checkout**: AI-assisted suggestions based on previous orders and frequency of use.

2. Inbuilt Wallet System

- **Prepaid Wallet for Users**: Users can recharge their wallet and pay directly from it.
- **Auto-Deduction for Subscriptions**: Amount gets deducted daily/weekly/monthly as per delivery frequency.
- **Wallet Refunds & Cashback Offers**: Integrated promotional logic for customer retention.

3. Discount & Coupon Engine

- Admins can create **dynamic discount campaigns** and **coupon codes** based on cart value, product type, or location.
- Time-based and event-based (festivals, bulk purchase) discounts implemented with validation checks.

4. Admin Panel

- Full control over:
    - Products, users, transactions.
    - Subscriptions and trial management.
    - Order scheduling and logistics tracking.
    - Creating and managing promotional campaigns and notifications.
- Live dashboard with analytics like:
    - Order trends, wallet top-ups, and customer churn.

5. Delivery Scheduling & Management

- Built-in system to handle daily delivery logs.
- Users can pause or skip a day's delivery (especially in subscriptions).
- Drivers get automated routes based on delivery locations and quantity.

6. User Panel

- User-friendly UI for tracking orders, managing subscription, wallet, coupons, and profile.
- Push notifications for:
    - Order confirmation, daily delivery reminders, wallet balance, and discounts.

7. Repair & Complaint System (Add-on)

- Users can **raise complaints** regarding damaged milk packets or missed deliveries.
- Ticketing system for customer support and admin resolution.

Tech Stack:

- **Frontend**: React.js, Tailwind CSS
- **Backend**: Node.js (Express)
- **State Management**: Redux
- **Database**: MongoDB (NoSQL), Firebase Realtime Database (for live notifications)
- **Authentication**: Firebase Auth
- **Deployment**: Vercel (frontend), AWS EC2 (backend), S3 (storage), MongoDB Atlas
- **DevOps**: Docker containers, NGINX as a reverse proxy
- **Payments**: Razorpay / Stripe wallet integration

Role:

Led the **entire architecture and development** of the application — from the React frontend, Redux state flows, and Node.js backend to wallet logic and subscription scheduling. Designed the **admin panel**, and handled authentication, coupon logic, and MongoDB schema.

Challenges & Solutions:

- **1. Subscription Scheduling Complexity**:
  - *Challenge*: Managing day-wise product delivery for thousands of users, auto-debiting wallet and handling skips.
  - *Solution*: Built a **custom subscription scheduler** with a queue-based processor to handle batch updates and retries with cron jobs.
- **2. Payment Gateway + Wallet Syncing**:
  - *Challenge*: Users topping up their wallet and making partial payments in combo (wallet + card).
  - *Solution*: Designed a **hybrid payment engine** that prioritizes wallet, then invokes external gateways, syncing transactions in real-time.
- **3. Real-Time Admin Insights**:
  - *Challenge*: Live monitoring of daily deliveries, complaints, and product returns.
  - *Solution*: Created a dashboard with MongoDB aggregations and React charts using D3.js for visual analytics.
- **4. Inventory Handling for Perishables**:
  - *Challenge*: Real-time inventory for products like milk that have a very short shelf life.
  - *Solution*: Implemented expiry-aware inventory logic with FIFO (First In, First Out) logic and alerts.

Impact:

- Enabled **over 2,000+ users** to switch from manual to digital dairy purchases.
- Reduced **customer churn by 35%** with trial-based onboarding and in-app wallet discounts.
- Improved **vendor supply chain** efficiency with scheduled delivery logs.

- Helped reduce **dairy product wastage** through intelligent inventory forecasting and skip features.
- Improved rural dairy businesses' access to a digital marketplace, boosting local economy.

Future Scope:

1. **AI-Powered Demand Prediction**:
    - Use historical data to predict daily demand and reduce waste in perishable inventory.
2. **ML-Based Personalized Recommendations**:
    - Suggest products and delivery times based on user behavior and region.
3. **Cold Chain Tracking with IoT Integration**:
    - Ensure quality by monitoring delivery temperatures via IoT sensors.
4. **Voice-Activated Ordering**:
    - Use NLP for voice command-based ordering via Alexa/Google Home.
5. **White-Label Solution**:
    - License platform to local dairy providers with branding and multi-vendor support.

Project Name: Pax-Paarth Packaging Solutions – Complete Product Design & Digital Commerce Ecosystem

Overview:

Pax-Paarth Packaging Solutions is a leading packaging products company, focusing on items like **tissue papers, toilet rolls, kitchen towels, and dry wipes**. The project aimed to **transform their entire product lineup and brand**

presence for both **offline and online markets**, including major platforms like Amazon and Flipkart.

Purpose:

The primary goal was to **build a cohesive and premium digital presence** for Pax-Paarth, enhance **B2B and B2C discoverability**, and create assets for **both physical and e-commerce sales**. From product presentation to online ordering and social engagement, the complete ecosystem was designed to align with industry standards and user behavior.

Key Deliverables:

1. Product Design & Visualization

- Created **3D models and mockups** of tissue papers, kitchen towels, toilet rolls, and wipes using Blender and Adobe tools.
- High-resolution **product display images and videos** optimized for Amazon, Flipkart, and D2C platforms.
- Realistic packaging renders with proper lighting, material texture, and perspective for maximum appeal.

2. Digital & Print Catalog Design

- Designed a comprehensive **product catalog** featuring:
    - Detailed specs, dimensions, pricing, use-cases.
    - Separate versions for **B2B buyers** and **end-users**.
- Optimized for both **print (CMYK)** and **web (RGB/PDF)** delivery.
- Integrated **QR codes** linking to online purchase pages or inquiry forms.

3. Website Development

- Developed a **fully responsive e-commerce website** for online product showcasing and ordering.
- Key features:
    - Product galleries with 360° views and video previews.
    - Real-time inquiry & order placement system.
    - Contact forms, catalogs downloads, admin panel for inventory and orders.
- Built with **React.js** for frontend, **Node.js + MongoDB** backend.

4. Mobile Application (Ordering App)

- Designed and developed a **cross-platform mobile app** using React Native.
    - Browse product ranges, view specifications, place direct B2B/B2C orders.
    - Push notifications for discounts, restocks, and promotions.
    - Integrated WhatsApp inquiry and call-to-order feature.

5. Social Media Content Creation

- Designed creative **Instagram and Facebook posts, stories, and highlight covers**.
- Produced high-quality **reels and animations** demonstrating product usage, quality, and USPs.
- Maintained a visually consistent, modern aesthetic across all social platforms.
- Scheduled content strategy and optimized hashtags for reach and engagement.

6. Marketplace Optimization

- Prepared **SEO-optimized content** and visuals for product listings on:
    - **Amazon**, **Flipkart**, and other B2C portals.
    - Ensured A+ content, bullet points, FAQs, and lifestyle images.
- Complied with platform-specific resolution, layout, and keyword guidelines.

Tech Stack:

- **Frontend**: React.js, React Native
- **Backend**: Node.js, Express
- **Database**: MongoDB
- **Design Tools**: Adobe Photoshop, Illustrator, After Effects, Blender (3D models)
- **Video Tools**: Premiere Pro, Canva Pro, CapCut for reels
- **Deployment**: AWS (EC2, S3), Vercel for frontend
- **Marketing**: Meta Business Suite, Amazon Seller Central

Role & Contributions:

- Acted as the **lead full-stack and design developer**.
- Headed the **creative direction for product visualization**, branding, and social media.
- Developed both **website and mobile app**, and ensured **synchronized experience across platforms**.
- Collaborated closely with the client to maintain **brand consistency and packaging accuracy**.
- Delivered a **scalable and multi-purpose content system** for sales, marketing, and logistics.

Challenges & Solutions:

- **1. Rendering Realistic Product Models**:
  Challenge: Getting accurate textures and materials for tissue and paper products.
  Solution: Used **PBR-based rendering** and multiple light setups in Blender for photorealistic visuals.
- **2. Multi-Platform Asset Optimization**:
  Challenge: Same content needed to be adapted for print, web, mobile, and social platforms.
  Solution: Built **design systems** and responsive templates to auto-adjust based on platform requirements.
- **3. Unified Brand Voice Across Channels**:
  Challenge: Maintaining consistency between catalog, social, web, and app assets.
  Solution: Established a **central brand guide** with color codes, fonts, iconography, and tone for all assets.

Impact:

- Boosted product visibility on Amazon and Flipkart by **65% within 2 months**.
- Improved B2B order efficiency by **40%** via online ordering and WhatsApp integrations.
- Delivered a polished brand image that aligned with **global packaging standards**.

- Generated over **5,000+ website visits** and **1,000+ app installs** within the first quarter post-launch.
- Enabled the client to compete with established packaging brands in both **retail and wholesale**.

Future Scope:

1. **AI-Based Dynamic Pricing** for bulk B2B orders based on location, demand, and quantity.
2. **AR Integration**: Let users preview product packaging in real-world environments
3. **CRM and Lead Funnel System** for wholesale buyers.
4. **Multilingual Support** to target regional and international markets.
5. **Automated Order Fulfillment Integration** with delivery partners (e.g., Shiprocket, Delhivery).