PROBLEM STATEMENTS

Domain: Climate, Energy & Green Technologies

Problem Statement Number: 1

Urban Air Pollution Awareness Platform

Urban air pollution remains one of India's most pressing environmental and public health challenges, driven by vehicular emissions, industrial activities, construction dust, and seasonal biomass burning. Indian cities consistently rank among the world's most polluted, with particulate matter ($PM_{2.5}$ and PM_{10}) and nitrogen dioxide (NO_2) levels far exceeding safe standards.

Despite extensive monitoring efforts by agencies like CPCB and IMD, the data collected often remains fragmented, underutilized, and inaccessible to the public. Citizens and policymakers lack a unified, transparent understanding of historical pollution patterns, regional hotspots, and their correlation with health impacts or seasonal variations. Without accessible, data-driven insights, it becomes difficult to evaluate the effectiveness of clean air initiatives, raise public awareness, and enable informed, community-level action toward improving urban air quality and public health outcomes.

Problem Statement Number: 2

Carbon Footprint Web Application for Indian Coal Mines

Coal remains a cornerstone of India's energy sector, powering nearly 74% of its electricity generation. At the same time, India is the world's second-largest coal producer and third-largest emitter from coal mining activities, with significant contributions to national CO_2 and CH_4 emissions. Methane emissions alone are projected to double by 2029, exacerbating climate impact.

Coal mining operations currently face challenges in accurately estimating emissions, identifying hotspots, monitoring carbon trajectories, and evaluating the effectiveness of reclamation, afforestation, or carbon offset efforts. Without integrated, data-driven insights, it is difficult to quantify sequestration potential, manage carbon credits, and support evidence-based policy and operational decisions to meet India's net-zero and carbon intensity reduction targets.

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Problem Statement Number: 3

Eco-Friendly Shopping Intelligence Browser Extension

Consumers face increasing difficulty in identifying environmentally sustainable products while shopping online. Most e-commerce platforms lack transparent information on carbon footprint, packaging waste, recyclability, ethical sourcing, and brand sustainability, making it challenging for shoppers to make informed eco-friendly choices. The absence of integrated sustainability ratings and comparative insights prevents users from understanding the relative environmental impact of products, tracking their personal consumption footprint, or selecting greener alternatives.

Additionally, the vast and unstructured nature of online product data, combined with diverse environmental metrics, makes it difficult to consistently assess and communicate a product's sustainability performance.

Problem Statement Number: 4

Energy Optimization & Renewable Integration Dashboard for India

Urban residential complexes in India are increasingly adopting rooftop solar panels and energy storage systems. However, fluctuations in solar generation, variable household consumption, and lack of real-time monitoring often lead to energy inefficiencies, wastage, and missed opportunities for cost savings. Residents and building managers currently lack actionable, localized insights into energy demand patterns, renewable energy contributions, and storage optimization.

Forecasting short-term and medium-term energy demand, understanding the potential for rooftop solar and wind integration, and analyzing energy usage at both individual and building levels remain significant challenges. This hinders the adoption of sustainable energy practices, increases operational costs, and limits evidence-based planning for efficient renewable integration within residential communities.

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Domain: Fintech & Enterprise

Problem Statement Number: 1

AI- Powered Smart Insurance Automation

The insurance claim process today remains highly manual, fragmented, and time-consuming, creating challenges for both customers and insurers. Claimants often struggle with complex forms, repeated document submissions, and slow communication, leading to confusion, frustration, and delayed claim settlements. For insurers, the process is labour-intensive, requiring significant time and resources to manually verify documents, validate claims, and detect fraud. This not only increases operational costs but also slows down payout cycles, reducing overall efficiency.

Furthermore, lack of transparency in claim tracking leaves customers uncertain about their claim status, while insurers face difficulties in maintaining consistency across multiple policy types and service providers. Manual verification increases the risk of human errors and fraudulent practices, affecting trust in the system.

As India moves toward a digital-first insurance ecosystem, there is a growing need for intelligent automation tools that can assist both insurers and customers in simplifying claim management. By leveraging AI, the solution must envision a secure, efficient, and future-ready claims automation platform that supports human decision-making while reducing effort, cost, and fraud paving the way for a faster, transparent, and customer-centric insurance experience.

Problem Statement Number: 2

Interactive Financial Literacy and Consumer EmpowermentPlatform

Financial illiteracy remains a major barrier to effective money management and long-term financial stability. Many individuals, particularly students, young adults, and retail investors, struggle to understand essential financial concepts such as budgeting, savings, credit, interest, debt, and financial planning. As a result, they often make uninformed financial choices or avoid beneficial financial products '

altogether. Existing financial education methods are typically complex, outdated, and disengaging, failing to connect with real-life situations or user needs.

Moreover, most people lack practical tools that help them apply financial knowledge in everyday life such as managing expenses, tracking budgets, or planning for major life events like home ownership, marriage, and retirement. Group financial management, including splitting bills or settling shared expenses, often adds further confusion and inefficiency. The absence of interactive, accessible, and personalized financial learning platforms widens the financial literacy gap and limits individuals from developing strong financial habits early in life. There is an urgent need for an engaging, intelligent, and user-friendly system that makes financial learning practical, fun, and empowering for everyone.

Problem Statement Number: 3

Skill-Linked Investing Platform - Empowering Entrepreneurs and Freelancers

Access to funding continues to be a major obstacle for first-time entrepreneurs and startups across industries such as technology, fashion, food, and services. Many talented founders struggle to secure the support they need to launch or grow their businesses, which limits innovation and economic opportunity at the grassroots level. There is a pressing need to build a system that allows entrepreneurs to connect directly with investors, organize pitch meets, and present their skills, milestones, and progress in a transparent way. Such a platform should also help founders find and team up with skilled professionals, enabling them to create strong, capable teams that can drive their startups forward.

Furthermore, it is important to develop a solution that helps entrepreneurs to increase engagement, foster meaningful collaborations, and provide greater exposure to investment opportunities, ultimately unlocking the true potential of emerging businesses and innovative individuals.
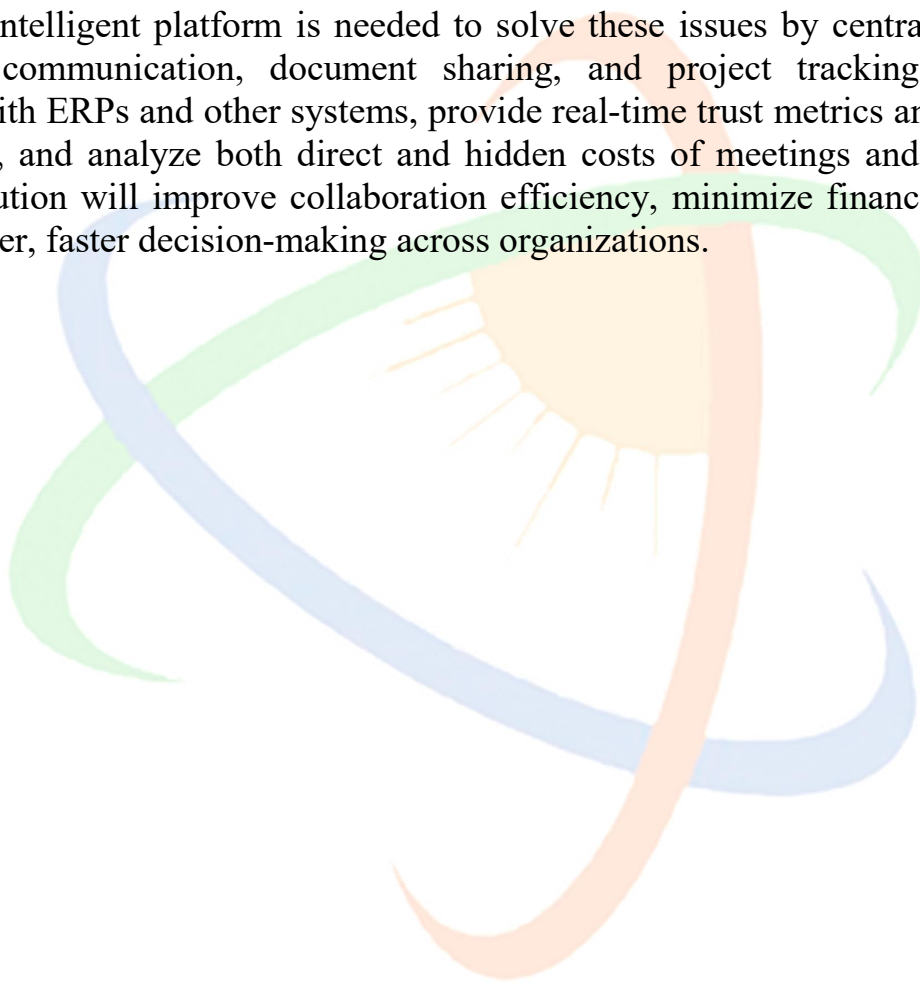
Problem Statement Number: 4

Enterprise Collaboration, Trust & Operational Intelligence Platform

Enterprises working together face major inefficiencies due to fragmented systems for finance, communication, and project management. ERPs and accounting tools track money flows but cannot evaluate partner reliability or real-time risks, while communication platforms measure interaction but not hidden costs of meetings or

workflow delays. Static credit ratings and reports are slow and fail to reflect the dynamic nature of enterprise partnerships, causing resource waste and increased risk. As a result, companies struggle with project delays, lost productivity, unexpected cash flow problems, and missed business opportunities. The lack of integrated tools leads to poor transparency in collaboration, limited visibility over shared documents, and unclear measurement of non-monetary costs like employee time or workflow breakdowns. This fragmentation increases operational risks and reduces trust between partners.

A unified intelligent platform is needed to solve these issues by centralizing inter-enterprise communication, document sharing, and project tracking. It should integrate with ERPs and other systems, provide real-time trust metrics and cash flow predictions, and analyze both direct and hidden costs of meetings and workflows. Such a solution will improve collaboration efficiency, minimize financial risk, and drive smarter, faster decision-making across organizations.

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Domain: Healthcare Tech & Wellness

Problem Statement Number: 1

Emotional Wellbeing and Mental Resilience Companion

Mental health challenges such as stress, anxiety, and burnout are increasingly affecting students and professionals, yet most existing wellbeing platforms offer only generic solutions that fail to address individual emotional needs. Many individuals lack tools to track emotional patterns, recognize early signs of distress, and contextually relevant access guidance.

Language barriers, privacy concerns, and limited offline accessibility further restrict access to meaningful mental health support, leaving large segments of the population without effective ways to build resilience, manage stress, or maintain sustainable emotional wellbeing habits. There is a critical need to address these gaps to ensure that personalized, inclusive, and accessible emotional wellbeing support is available to all users.

Problem Statement Number: 2

Independent Living and Safety Companion for Aging Adults

With the global population aging rapidly, millions of elderly individuals are living independently and face increasing challenges in maintaining their health, safety, and daily routines. Many seniors struggle to manage medications, meals, hydration, exercise, appointments, and social engagement, while also being at risk of falls, irregular vital signs, or other emergencies. Deviations in daily routines or health indicators often go unnoticed until serious issues arise.

Current eldercare solutions fail to provide continuous, personalized monitoring and proactive alerts, leaving seniors vulnerable and dependent. There is a critical need to address these gaps to ensure that elderly individuals can live safely, maintain their independence, and receive timely support when risks or deviations occur.

Problem Statement Number: 3

Personalized Nutrition and Adaptive Health Guidance System

Personalized nutrition is essential for promoting long-term health, yet millions of individuals struggle with generic diet plans that fail to account for their unique biology, lifestyle, and health conditions. Traditional approaches are unable to effectively incorporate gut microbiome composition, real-time health metrics, activity levels, and dietary behavior, leading to limited accuracy, low engagement, and suboptimal health outcomes.

Many people lack guidance that evolves with their changing physiology and daily habits, making it difficult to maintain sustainable healthy eating practices. There is a critical need to address these gaps to ensure that nutrition advice is precise, personalized, and adaptable, empowering individuals to manage their health effectively and make informed dietary choices.

Problem Statement Number: 4

Unified Healthcare Data and Insights Management Platform

The current healthcare ecosystem suffers from data fragmentation and lack of interoperability, with patient information scattered across multiple clinics, hospitals, and diagnostic centers. This fragmentation limits continuity of care, hinders data-driven decision-making, and creates operational inefficiencies, making it difficult for healthcare providers to manage appointments, patient load, and resource allocation effectively.

Patients often lack a unified, secure interface to access their medical histories, prescriptions, and diagnostic results, which compromises informed decision-making and seamless care. There is a critical need to address these gaps to ensure efficient, coordinated, and patient-centered healthcare delivery while maintaining data privacy and control.

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Domain: Tech for Social Good | Smart & Safe living

Problem Statement Number: 1

Community Help Exchange – Smart Local Collaboration Platform

In today's fast-paced and digitally connected world, people still struggle to find trustworthy local support whether it's borrowing equipment, renting community spaces, finding a tutor, completing small tasks, or seeking emotional support and companionship in a new area. At the same time, many individuals possess skills, time, or resources they are willing to share but lack a secure, intelligent, and user-friendly medium to connect with others nearby.

The challenge is not just to build a simple help-sharing app, but to design a smart, secure, and scalable digital ecosystem that can foster genuine community collaboration. Participants must tackle complex issues such as establishing trust among strangers, verifying authenticity, protecting user privacy, and ensuring fairness in how help or resources are matched and exchanged. The platform should be capable of understanding context, adapting to diverse community needs, and detecting potential misuse or harmful behavior all while keeping the experience seamless and inclusive.

Teams are encouraged to think creatively about how technology can balance openness with safety, automation with empathy, and data intelligence with ethical responsibility. The solution should demonstrate how innovation can strengthen real-world connections and build mutual support networks that are reliable, transparent, and human-centered.

The ultimate goal is to develop a community-driven collaboration platform that not only connects people but also addresses deeper technical and social challenges creating a smarter, safer, and kinder society through technology.

Problem Statement Number: 2

Holistic Urban Surplus Optimization Network

Urban areas generate massive quantities of surplus food, clothing, household items, hygiene products, educational materials, and other essentials every day from restaurants, supermarkets, delivery services, corporate offices, hostels, event venues, and households. While much of this surplus is perfectly usable, it is often discarded due to short shelf life, logistics inefficiencies, lack of coordination, or fragmented distribution channels.

At the same time, communities across the city face gaps in access to basic resources, nutrition, clothing, or educational materials, highlighting a critical disconnect between availability and need. Existing donation networks, NGOs often operate in silos, lacking the real-time data and coordination required to match surplus resources with the right recipients efficiently. The disconnect lies not in the availability of resources but in the absence of data-driven, intelligent redistribution systems that can identify, classify, and deliver the right resources to the right people at the right time.

A system with a holistic approach to measure, classify, and intelligently allocate urban surplus to maximize social benefit is required. It should employ advanced methods to identify the types, quantities, and condition of surplus, while forecasting demand patterns across communities.. The system should dynamically adapt allocation strategies as new data comes in, adapt to dynamic urban conditions, including perishability of items, seasonal trends, and varying community needs. There is also a pressing need to ensure trust and accountability, so donors, organizations, and recipients can confidently engage with the platform.

Problem Statement Number: 3

Inclusive Cultural Empowerment and Heritage Preservation Platform

Artisans and cultural workers from marginalized communities face deep challenges such as economic instability, digital isolation, and lack of recognition. Their crafts and cultural expressions are diminishing due to inadequate support and visibility. Existing platforms emphasize profits, neglecting the preservation of heritage and community well-being.

There is a pressing need for an inclusive and people-first platform that celebrates artisans and their traditions. Artisans would lead workshops and hands-on experiences to teach others, supported by NGOs. Activities like pottery dates, block printing sessions, handlooms and weaving meetups would attract the public. Such experiences allow people to connect meaningfully with artisans and their cultural stories, giving artisans much needed reach and another source of income. A curated marketplace would sell authentic crafts while promoting fair compensation.

An AIML-driven artisan discovery and recommendation engine connects artisans with their ideal audience. Employ various techniques that make the platform more accessible and inclusive for artisans. A portal for NGOs with a dashboard and a tool to help them find remote tribal villages to work with.

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Problem Statement Number: 4

Smart Inclusion App for PwDs: Accessibility, Emergency Help,Volunteers, Events, and Schemes

Despite many government schemes, NGO services, and assistive facilities, Persons with Disabilities (PwDs) still face difficulties in moving around, accessing public spaces, and knowing about available support. Information about accessible places, infrastructure, rehabilitation services, and schemes from governments and NGOs is scattered, outdated, and hard to verify. Many PwDs rely on guesswork or help from others to travel, access healthcare, or reach basic services.

Facilities like ramps, tactile paths, accessible washrooms, and wheelchair-friendly transport are not always documented, making navigation challenging. Emergency help is limited or difficult to access quickly. Many PwDs are unaware of government or NGO schemes they could use, and awareness about nearby volunteers, NGOs, and community programs is low, reducing timely assistance.

There is a need for verified, real-time information about accessibility, nearby support, and available schemes. This can help PwDs move safely, connect with volunteers or NGOs in emergencies, and participate in events, workshops, and inclusive programs. Better access to guidance, assistance, and community resources can significantly improve independence, safety, and inclusion in everyday life.