ACE HACKS

Problem Statements

ACE HACKS
WEB/APP
Problem Statements 01

"Empowering Local Businesses: Creating a Crowdsourced Delivery Platform for Seamless Last-Mile Logistics"

Traditional last-mile delivery services often cater to large corporations, leaving local businesses struggling with high costs and limited reach. This project aims to create a crowdsourced delivery platform that connects local businesses with independent delivers, ensuring efficient, cost-effective, and sustainable last-mile logistics. The platform will empower local businesses to compete with larger entities while providing delivers with flexible opportunities to earn income.

Features

- Real-Time Tracking: Implement GPS tracking for both businesses and delivers to monitor the delivery process in real-time.
- Dynamic Pricing: Develop a pricing algorithm that adjusts delivery fees based on factors like distance, demand, and delivery time.
- Rating and Review System: Allow businesses and customers to rate delivers, fostering accountability and quality service.
- Integrated Payment System: Ensure secure and seamless payment processing for both businesses and delivers.
- Analytics Dashboard: Provide businesses with insights into their delivery performance, including metrics on delivery times, costs, and customer feedback.

Bonus Points

- Implement machine learning for predictive delivery to dynamically adjust routes based on real-time traffic and weather conditions.
- Integration of a feature allowing for customer support and query resolution.
- Incorporating environmental impact assessments to promote eco-friendly delivery options.
- Implementing a feature for delivers and businesses to provide feedback on the platform's performance and suggest improvements.

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ACE HACKS
WEB/APP
Problem Statements 02

"Revolutionizing Healthcare: Creating a Telemedicine Platform for Enhanced Patient Accessibility and Efficient Healthcare Delivery"

The healthcare sector faces challenges in providing timely and accessible medical consultations, especially in remote areas. This project aims to create a telemedicine platform that connects patients with healthcare providers, ensuring efficient, cost-effective, and sustainable healthcare delivery. The platform will empower healthcare providers to reach more patients while providing patients with flexible opportunities to access medical consultations.

Features

- Real-Time Consultations: Implement a secure video conferencing system for real-time consultations between patients and healthcare providers.
- Appointment Scheduling: Develop a user-friendly interface for patients to schedule appointments with healthcare providers.
- Electronic Health Records: Integrate a secure system for maintaining and accessing patient health records.
- Prescription Management: Implement a system for electronic prescriptions and medication tracking.
- Analytics Dashboard: Provide healthcare providers with insights into their performance, including metrics on patient satisfaction, consultation times, and revenue.

Bonus Points

- Implement machine learning for predictive analytics to identify patient health trends and potential risks.
- Integration of a feature allowing for multilingual support and accessibility for diverse patient populations.
- Incorporating environmental impact assessments to promote eco-friendly healthcare practices.
- Implementing a feature for patients and healthcare providers to provide feedback on the platform's performance and suggest improvements.

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ACE HACKS
WEB/APP
Problem Statements 03

"Revolutionizing Professional Growth and Learning in the Digital Age"

The rapid evolution of the digital landscape has transformed the way professionals engage with learning and development. Traditional methods of professional growth are increasingly insufficient to keep pace with the dynamic demands of the modern workplace. This project aims to create a comprehensive platform that leverages cutting-edge technology to provide personalized, adaptive, and engaging learning experiences for professionals across various industries. The platform will empower users to acquire new skills, stay updated with industry trends, and foster a culture of continuous learning.

Features

- Personalized Learning Paths: Implement algorithms to create tailored learning paths based on user profiles, skill assessments, and career goals.
- Interactive Content: Develop a library of interactive courses, simulations, and multimedia resources to enhance learning.
- Integrated Professional Networking: Facilitate connections with peers, mentors, and industry experts through forums, discussion boards, and collaborative projects.
- Gamification: Incorporate gamified elements such as badges, leaderboards, and rewards to motivate learners.
- Analytics Dashboard: Provide a dashboard for users to track their progress, view performance metrics, and receive insights on areas for improvement.

Bonus Points

- Implement machine learning algorithms to dynamically adjust learning paths based on real-time performance data and feedback.
- Integration of a feature allowing for multilingual support and accessibility for diverse global audiences.
- Incorporating environmental impact assessments to promote eco-friendly practices in the digital learning ecosystem.
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Problem Statements 03

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ACE HACKS
AI/ML
Problem Statements 04

Developing a Low-Tech Handwritten Medical Prescription Digitization Model for Rural Healthcare Accessibility

The digitization of prescriptions in rural healthcare settings presents a unique challenge due to the prevalence of low-tech, handwritten prescriptions. This project aims to develop a low-tech model that can accurately digitize handwritten medical prescriptions, ensuring accessibility and efficiency in healthcare delivery for rural communities. The model will empower healthcare providers to digitize prescriptions using minimal resources, facilitating better patient care and data management.

Features

- Data Collection: Gather a diverse dataset of handwritten medical prescriptions from various rural healthcare providers.
- Data Preprocessing: Implement image preprocessing techniques to enhance the quality of the collected prescriptions.
- Model Training: Develop a lightweight machine learning model using techniques like convolutional neural networks (CNN) or recurrent neural networks (RNN).
- Optimization: Optimize the model for low-resource environments, ensuring it can run on basic hardware.
- Integration: Provide a simple interface for healthcare providers to upload and digitize prescriptions.

Bonus Points

- Implement a feedback mechanism to continuously improve the model's accuracy based on user corrections.
- Integration with existing healthcare management systems to ensure seamless data transfer.
- Incorporating multilingual support to accommodate different languages and dialects.
- Implementing a feature for offline processing to ensure functionality in areas with limited connectivity.

ACE HACKS
AI/ML
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ACE HACKS
AI/ML
Problem Statements 05

Spatial-Temporal Anomaly Detection

The Spatial-Temporal Anomaly Detection project aims to develop a robust system that identifies anomalies in spatial and temporal data. This project is crucial for various applications, including monitoring environmental changes, detecting fraud in financial transactions, and ensuring the security of critical infrastructure. The system will leverage advanced machine learning techniques to analyze complex datasets and provide real-time alerts for anomalies.

Features

- Data Preprocessing: Implement data cleaning and preprocessing techniques to ensure the quality of the input data.
- Feature Extraction: Develop algorithms to extract relevant features from spatial and temporal data.
- Anomaly Detection Algorithms: Implement various anomaly detection algorithms, such as statistical methods, machine learning models, and deep learning techniques.
- Real-Time Monitoring: Ensure the system can process and monitor data in real-time to detect anomalies as they occur.
- Alert System: Develop a notification system to alert users when anomalies are detected.
- Visualization Dashboard: Provide a dashboard for visualizing the detected anomalies and their spatial and temporal patterns.

Bonus Points

- Implement advanced machine learning models, such as deep learning or reinforcement learning, for improved anomaly detection.
- Integration with external data sources to enhance the system's capabilities.
- Scalability: Ensure the system can handle large datasets and scale efficiently as the data volume increases.
- Customizable Alerts: Allow users to customize the alert system based on their specific requirements.
- Historical Analysis: Provide tools for analyzing historical data to identify trends and patterns.
- Automated Reporting: Generate automated reports summarizing detected anomalies and their impacts.

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AI/ML
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ACE HACKS
Social-Cause
Problem Statements 06

Smart Waste Management: Integrating Computer Vision and Geospatial Analytics

Waste management in urban areas is a critical issue that impacts environmental sustainability and public health. This project aims to develop a smart waste management system that leverages computer vision and geospatial analytics to optimize waste collection, reduce illegal dumping, and enhance recycling efforts.

Features

- Waste Detection: Implement a computer vision model to detect and classify different types of waste from images or video feeds.
- Geospatial Analytics: Integrate geospatial data to map waste hotspots and optimize collection routes.
- Real-Time Monitoring: Develop a dashboard for real-time monitoring of waste levels and collection status.
- Alert System: Implement a notification system to alert waste collectors when bins are full or when illegal dumping is detected.
- Analytics Dashboard: Provide insights into waste generation patterns, collection efficiency, and recycling rates.

Bonus Points

- Implement predictive analytics to forecast waste generation and optimize resource allocation.
- Integration with IoT sensors for automated waste level monitoring.
- Incorporating gamification elements to incentivize proper waste disposal and recycling.
- Implementing a feature for citizen reporting of illegal dumping with geotagged photos.

ACE HACKS
Social-Cause
Problem Statements 06

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ACE HACKS
Social-Cause
Problem Statements 07

Intelligent Crop Recommendation Network

The project aims to develop a comprehensive and scalable system that provides personalized crop recommendations to farmers, leveraging machine learning and data analytics. The system will consider various factors such as soil quality, weather patterns, market demand, and historical crop performance to offer tailored recommendations that maximize yield and profitability.

Features

- Data Collection: Gather a diverse dataset including soil quality, weather patterns, market demand, and historical crop performance.
- Data Preprocessing: Implement data cleaning and preprocessing techniques to ensure the quality of the input data.
- Feature Engineering: Develop algorithms to extract relevant features from the collected data.
- Machine Learning Models: Implement various machine learning models, such as decision trees, random forests, and neural networks, for crop recommendations.
- Real-Time Updates: Ensure the system can provide real-time updates based on changes in weather and market conditions.
- User Interface: Develop a user-friendly interface for farmers to access crop recommendations.

Bonus Points

- Implement advanced machine learning techniques, such as reinforcement learning, for improved recommendations.
- Integration with external data sources to enhance the system's capabilities.
- Scalability: Ensure the system can handle large datasets and scale efficiently as the data volume increases.
- Multilingual Support: Provide support for multiple languages to cater to a diverse user base.
- Feedback Mechanism: Implement a feedback system to continuously improve the model's accuracy.
- Automated Reporting: Generate automated reports summarizing crop recommendations and their impacts.

ACE HACKS
Social-Cause
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ACE HACKS
Cyber-Security
Problem Statements 08

Project Green Watch: TVR Counter Dashboard

The processing of TVR data from Set Top Boxes (STBs) and Smart Televisions (STVs) is crucial for understanding viewership patterns and optimizing content delivery. This project aims to develop a comprehensive dashboard that will provide real-time insights into TVR data, enhance data security, and ensure compliance with regulatory standards.

Features

- Data Ingestion and Preprocessing: Implement robust data ingestion pipelines to collect TVR data from various STBs and STVs, ensuring data quality and consistency.
- Real-Time Dashboard: Develop a dashboard that provides real-time visualizations of TVR data, including viewership trends, peak viewing times, and geographical distribution.
- Anomaly Detection: Implement machine learning algorithms to detect anomalies in viewership patterns, such as sudden spikes or drops in viewership.
- Automated Reporting: Generate automated reports summarizing key metrics and insights for stakeholders.
- Data Encryption: Ensure all data is encrypted both in transit and at rest to maintain data security.
- Access Control: Implement role-based access control to restrict access to sensitive data.
- Audit Logs: Maintain comprehensive audit logs for all data access and modifications.
- Compliance Monitoring: Ensure the system adheres to relevant data privacy regulations.
- Reporting Dashboard: Provide comprehensive reports on compliance status, including any breaches or vulnerabilities.

ACE HACKS
Cyber-Security
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ACE HACKS
Cyber-Security
Problem Statements 09

Bonus Points

- Implement advanced machine learning algorithms for better anomaly detection and predictive analytics.
- Integration with external threat intelligence feeds to enhance the system's capabilities.
- Automated Incident Response: Develop automated response mechanisms for detected anomalies.
- Scalability: Ensure the system can handle large datasets and scale efficiently as the data volume increases.
- Customizable Alerts: Allow users to customize the alert system based on their specific requirements.
- Historical Analysis: Provide tools for analyzing historical data to identify trends and patterns.
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ACE HACKS
Cyber-Security
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