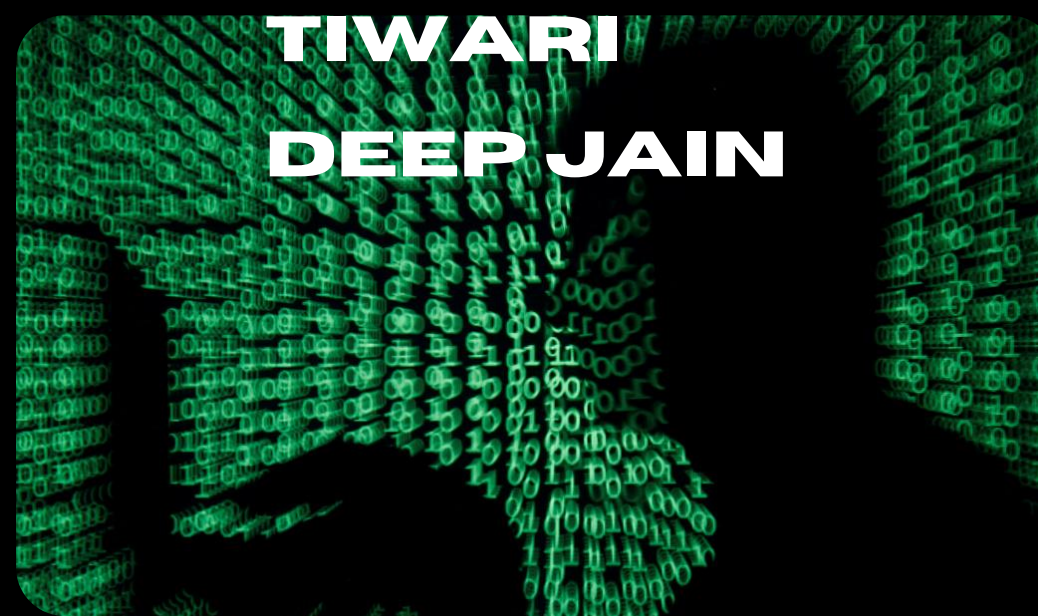




TEAM
DETAILS:
IDEAMASTERS
HARSH
CHITALIYA
SATYAVRAT



TIWARI
DEEP JAIN



ANALYTIKA

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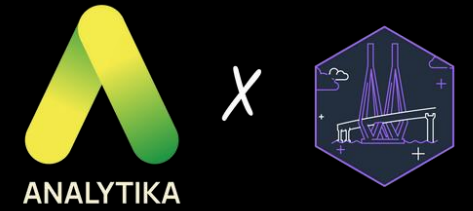


presents

DATATHON **2.0**

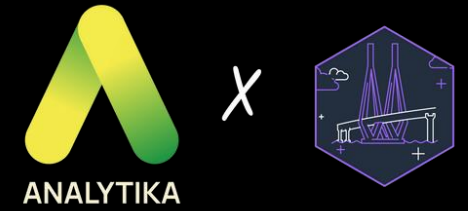
Where Data Science transforms Ideas
into impact

Problem Statement



Fashion/Textile Industry is the third most polluting industry which produces about 20% of global wastewater and 10% of our annual carbon footprint. Only 15% of used textiles are theoretically 'recycled', with up to half of that amount shipped overseas where the materials often end up landfills anyway due to less advanced waste management systems. Textile waste take up to 200+ years to decompose thus releasing harmful chemicals into soil and water which harms human as well as animal health. Apart from this it's estimated that fashion/textile industry consumes around 4% of all freshwater extraction globally which is around 93 billion cubic metres of water. The problem statement for using trained models by AI includes identifying various ways to reduce textile waste, optimize the recycling and analyzing human textile consumption for future reference.

Objective / Infrastructure



Objective:

The main goal is to change the fashion and textile business by putting in place a sustainable, closed-loop system that lowers its effect on the earth.

Infrastructure:

Build a cutting-edge cloth recovery center with the latest sorting technology and garbage processing units.- Create a complete system for tracking materials to keep an eye on the whole lifetime of clothes. This will encourage openness and ethical sources.- Run teaching programs to make more people aware of eco-friendly fashion choices and the damage that cloth trash does to the earth.

Implementation



We can implement this solution in three phases which are as follows:

Phase 1: Setting up the recycling center

Get and set up sorting technology that is based on quantum mechanics to make cloth sorting more efficient.- Use systems that are run by AI to find and sort mixtures of complex materials.- Form relationships with local garbage management facilities to make sure that trash that can't be recycled is thrown away properly.

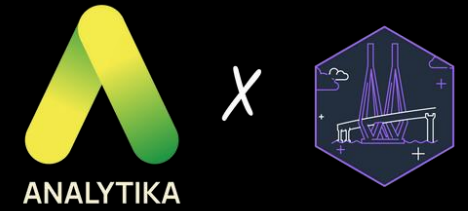
Phase 2: Material Tracking System

Use a blockchain - based material ID to keep track of clothes from the time they are made to the time they are thrown away.- Work with fashion brands to get them to use the tracking system, which will make the whole business more open.- Use IoT devices to track the flow of clothes in real time along the supply chain.

Phase 3: Programs for education

Make interesting teaching material about how the fashion business affects the earth. Work together with neighborhood groups, schools, and colleges to hold events and raise understanding.- Use social media and influential people to spread ideas about sustainable fashion.

Tools / Items Used



❖ Data Collection And IOT Devices:

MQTT protocol

Raspberry PI

Webscrapping

Image Recognition – OpenCV or PyTorch

Natural Language Processing (NLP)

❖ Data storage:

Mongo DB

❖ Data processing:

Pandas,Numpy

❖ Machine learning Framework:

Tensorflow and PyTorch

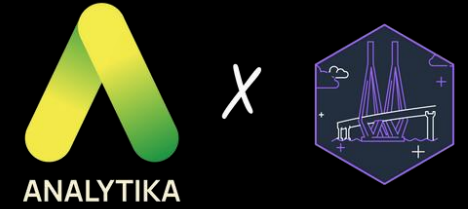
Linear Regression and Decision Tree

SciPy for optimization User

❖ Interface:

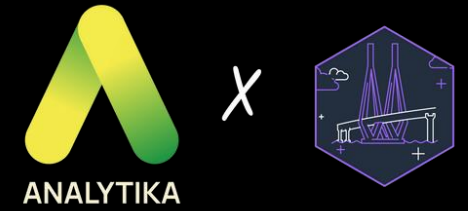
HTML,CSS,Django,JS

Impact



- ❖ A well-known clothing label has joined forces with the system to use blockchain-based material passports in their manufacturing processes. Using quick response (QR) codes, shoppers may learn more about a product's construction, where it came from, and how to properly dispose of it. In addition to improving openness, this use case gives customers more agency in making sustainable decisions based on accurate information.
- ❖ 70% less textile waste may be produced by upcycling and effective sorting.
- ❖ Reduce greenhouse gas emissions from the manufacture and disposal of garments.
- ❖ Encourage ethical sourcing and openness in the fashion sector.
- ❖ Encourage customers to choose sustainably and prolong the life of their clothing

Future Vision



- ❖ Artificial intelligence has a bright future when it comes to addressing textile waste. Imagine a world where textiles are effortlessly separated based on composition and condition by intelligent sorting facilities driven by machine learning and image recognition, optimizing recycling efficiency.
- ❖ AI-powered forecasting models could anticipate future trends and maximize output while reducing waste and excess inventories.
- ❖ Blockchain technology has the potential to provide total supply chain transparency, giving customers the ability to make knowledgeable decisions and holding manufacturers responsible.
- ❖ Chatbots may provide individualized guidance on upcycling and sustainable disposal options, while augmented reality experiences could instruct customers on how to care for their clothing and promote conscious consumerism.
- ❖ In the end, artificial intelligence (AI) has the power to completely transform the textile sector by establishing a circular economy that minimizes waste, conserves resources, and embraces a more sustainable future for fashion.

Advantages



- ❖ Intelligent sorting: AI-powered vision systems select items for optimum recycling and reuse. (Precision)AI predicts trends and customer behavior, reducing overproduction and waste. (Demand-driven)Automating data sorting and analysis saves time and resources. (Scalability)
- ❖ Sustainability:Circularity: AI encourages textile reuse and upcycling to reduce landfill waste. (Resourceful)Recycling and efficient manufacturing reduce resource utilization and carbon emissions. (Eco-friendly)Informed choices: AI delivers explicit clothing sustainability information to make careful buying. (Transparency)
- ❖ Economic impact:Cost savings: Efficiency and waste reduction decrease manufacturing and disposal costs. (Profitable)AI-powered innovation opens sustainable fashion and recycling tech businesses. (Growth)Competitive edge: AI-powered brands attract eco-conscious customers. (Marketable)
- ❖ Impact on society: The AI sector needs qualified workers, creating jobs. (Empowering)Textile waste reduction improves health and the environment. (Wellbeing)Transparent supply chains encourage ethical sourcing and fair work. (Responsible)



THANKYOU