

Webscrapping & Data Processing

Sustainable Nike Sneaker Marketplace

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[Github Link](#)
[Our Streamlit App](#)



Introduction

In the evolving landscape of e-commerce, our project aims to address the growing demand for sustainable options within niche markets, specifically focusing on second-hand Nike sneakers.

The project involves the development of a dedicated interface that allows users to explore pre-owned Nike sneakers.

How can we empower users to make sustainable and economical choices when purchasing second-hand Nike sneakers ?

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PROJECT OVERVIEW



700 million kg of CO₂

The contribution of the footwear industry to global carbon emissions



Here's where our project makes a difference :



Sustainable Shopping Experience : We provide users access to pre-owned Nike sneakers, reducing demand for new production and thereby cutting down on carbon emissions and waste.

Empowerment Through Information : Our platform educates consumers on the environmental impact of their purchases, including detailed carbon footprint profit estimations for each pair of sneakers ordered from second-hand websites.

Economic Advantage : By offering second-hand options, we open up avenues for affordable sustainability, making eco-friendly choices accessible to a broader audience.

Legal & Ethical Considerations



Respecting Legal Standards

Before embarking on the data gathering process, we conducted research to ensure that web scraping activities for Vinted, Vestiaire Collective, and Nike adhere to legal and ethical standards. It is essential to emphasize that our project respects the terms of service of these platforms, and the scraping process is carried out responsibly, avoiding any disruptive impact on the websites.

Ethical Data Practices

Furthermore, our aim is not to compromise user privacy or violate any regulations. With a commitment to ethical data practices, we have crafted our scraping scripts to access only publicly available information, contributing to a positive and lawful online environment.

WEB SCRAPPING & DATA COLLECTION

Vinted

Extracts article url, titles, prices, sizes, colors, images url, and seller locations for each sneaker listing.

`get_vinted_data()`

Formats and categorizes the data for consistency.

`process_dataframe()`

Scrap average price of Nike sneaker model from the official website for an accurate price benchmark



Integrates carbon footprint calculation using geopy with seller's location and predefined emission rates

`calculate_approximate_carbon_footprint() and profit`

`get_nike_prices function`

`calculate_profit_made()`

Concatanate both dataframes

Vestiaire Collective

`get_vestiaire_data()`

Extracts article url, titles, prices, sizes, colors, images url, and seller locations for each sneaker listing.

`process_data_vestiaire()`

Formats and categorizes the data for consistency.



Consolidated Nike Sneaker Database

WEB SCRAPPING & DATA COLLECTION

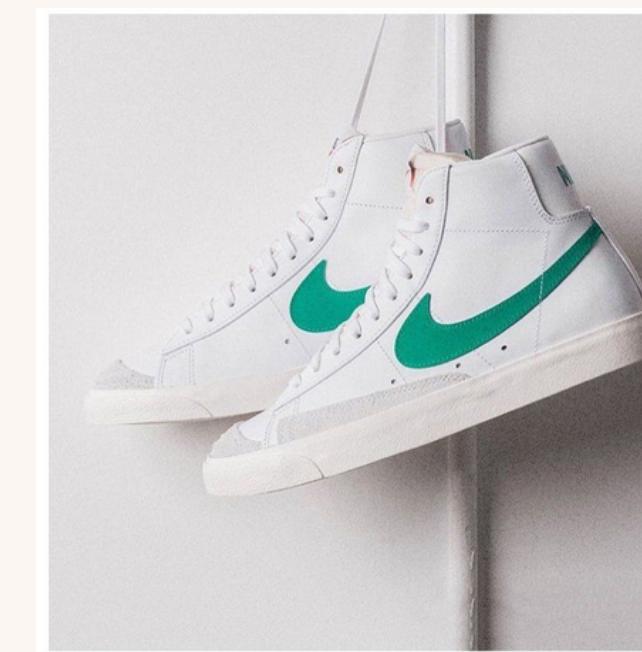
To effectively demonstrate the capabilities and potential of our project, we have strategically focused on constructing a database featuring the **top 5 best-selling** Nike sneaker models.



Nike Air Force 1



Nike Air Max 1



Nike Blazer



Nike Dunk



Nike Mag

NIKE SHIPPING EMISSION RATE CALCULATION



Shipping from Vietnam to Laakdal (by container ship) :

Carbon Emissions (maritime) = $9,000 \text{ km} \times 40 \text{ g CO}_2/\text{ton-km} = 360,000 \text{ g CO}_2/\text{ton}$

Shipping from Laakdal to Paris (by truck) :

Carbon Emissions (truck) = $300 \text{ km} \times 150 \text{ g CO}_2/\text{ton-km} = 45,000 \text{ g CO}_2/\text{ton}$

Now, adding both values for the total estimate :

Total Carbon Emissions $\approx 360,000 \text{ g CO}_2/\text{ton} + 45,000 \text{ g CO}_2/\text{ton}$
 $\approx 405,000 \text{ g CO}_2/\text{ton}$

Converting this to kilograms (1 ton = 1,000 kg) :

Total Carbon Emissions $\approx 405,000 \text{ g CO}_2/\text{ton} \times (1 \text{ kg} / 1,000 \text{ g}) = 405 \text{ kg CO}_2/\text{ton}$

STREAMLIT APP

Our Streamlit App available [here](#), offers a user-friendly interface for exploring Nike sneakers with tailored search options.

Features



Interactive User Interface



Dynamic Data Display



Carbon Footprint Display



Profit Made Display



Direct Link to Purchase

The screenshot displays the Streamlit application's user interface for exploring Nike sneakers. At the top, there is a header with the title "Sustainable Nike Sneaker Marketplace" and a subtitle "Empowering users to make environmentally conscious and economically informed choices when purchasing sneakers." Below the header, there is a search form with fields for "Select Sneaker Model" (set to "Nike Air Force 1"), "Select gender" (set to "Men"), "Select color" (set to "blanc"), and "Enter size" (set to "42"). A "Search" button is located next to the size field. To the right of the search form, three sneaker models are displayed in a grid:

- AIR FORCE 1**
20.00 €
You are saving 193.41 kg CO2
You are making a profit of 97.33 €
[Open Article](#)
- NIKE AIR FORCE 1**
25.00 €
You are saving 87.01 kg CO2
You are making a profit of 92.33 €
[Open Article](#)
- AIR FORCE 1**
35.00 €
You are saving 326.56 kg CO2
You are making a profit of 82.33 €
[Open Article](#)

Thank you very much!

Our Streamlit App

