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Mapping Urban Vulnerability areas (Crimes, Disasters, etc.) using Open Source Data

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DATA COLLECTION

TASK-1

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Initial Investigation

CRIME STASTICS

Kaggle - Data sets were older than the requirements

SAPS - Data sets were more up to date but were in password protected workbooks so proved difficult to extract

Supplimentary Data - This has proved very difficult as data sets are either pay per use or via application

IMAGES

Google - This was the best source of images and several scripts were written by team members to scrape the images

Supplied by Shenese - Crime images already supplied at start of project

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Data Collection

STASTICAL INFORMATION

We managed to extract data from SAP's excel files and have data from about 2016 to 21 in monthly format.

We added two extra features, latitude and longitude.

IMAGERY

We have a great team working on collecting images.

Image sorting and resizing for the Model team.

Pre processing was carried out and images were resized to 300x300.

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DATA COLLECTED

3,347,784 rows

Over 2000 images

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Challenges

IMAGE SOURCING

Time - Large variety of imagery required.

IMAGE RESIZING

Deciding on the best way to do this.

DATA COLLECTION

The sheer lack of publically available data on South Africa.

DATA PREPROCESSING

Some challenging data provided by SAPs.

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Types of Data

DATA SOURCES

The data included the following features that we could easily extract:

- 'station' - Police station where crime was reported
- 'province' - The province where the crime was committed
- 'district' - The district where the crime was committed
- 'crime_category' - The type of crime committed
- 'date' - The month the crime was committed in
- 'number_of_crimes' - The number of crimes committed in the month

We then collected latitude and longitude of the stations and added two more feature:

- 'latitude'
- 'longitude'

LINKS

GitHub

https://github.com/OmdenaAI/south-africa-chapter-mapping-urban-v

Notion

https://www.notion.so/South-Africa-Chapter-Mapping-Urban-Vulnerability-areas-Crimes-Disasters-etc-using-Open-Source--69e24d6f5c04497281afb3e8d742cbde

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https://omdena.com/chapter-challenges/mapping-urban-vulnerability-areas-using-open-source-data/

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