

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

OMDENA SOUTH AFRICA

EDA, VISUALS, DEPLOY

TASK-4

Initial Discussion

EDA

We decided to go with the data:

- Crimes data
- Conflicts data
- Weather data
- Geometry data

We would clean the data by removing nulls, correcting errors, and filling or matching missing values.

VISUALS & DEPLOYMENT

We decided to use the following software for the visuals and deployment:

- Power BI
- Streamlit

DATA COLLECTED

3,665,376 rows

23 Features

Data EDA & Visualisation

EDA

We managed to extract data from SAP's excel files and have data from 2016 to 21 in monthly format, along with weather and geospatial data.

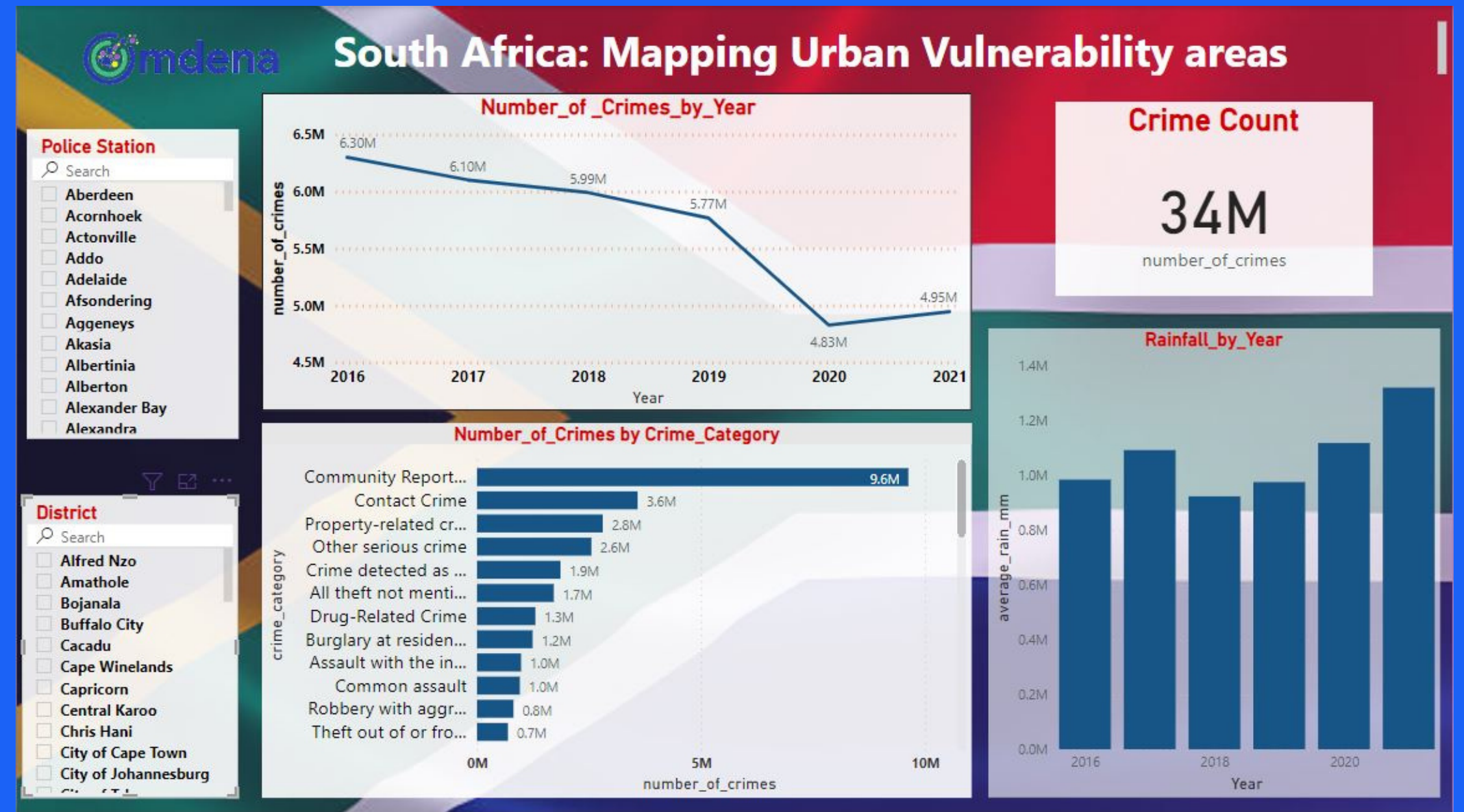
We added the following extra features:

- latitude
- longitude
- district, municipality
- district id, station id and province id
- month
- year
- average maximum temperature
- average minimum temperature
- average rain in mm's
- average windspeed
- geometry coordinates for stations, districts and provinces along with their id's

Data EDA & Visualisation

VISUALISATIONS

Using Power BI and the datasets produced from the EDA we created statistical and visual outputs on a live dashboard integrated into a Streamlit App.

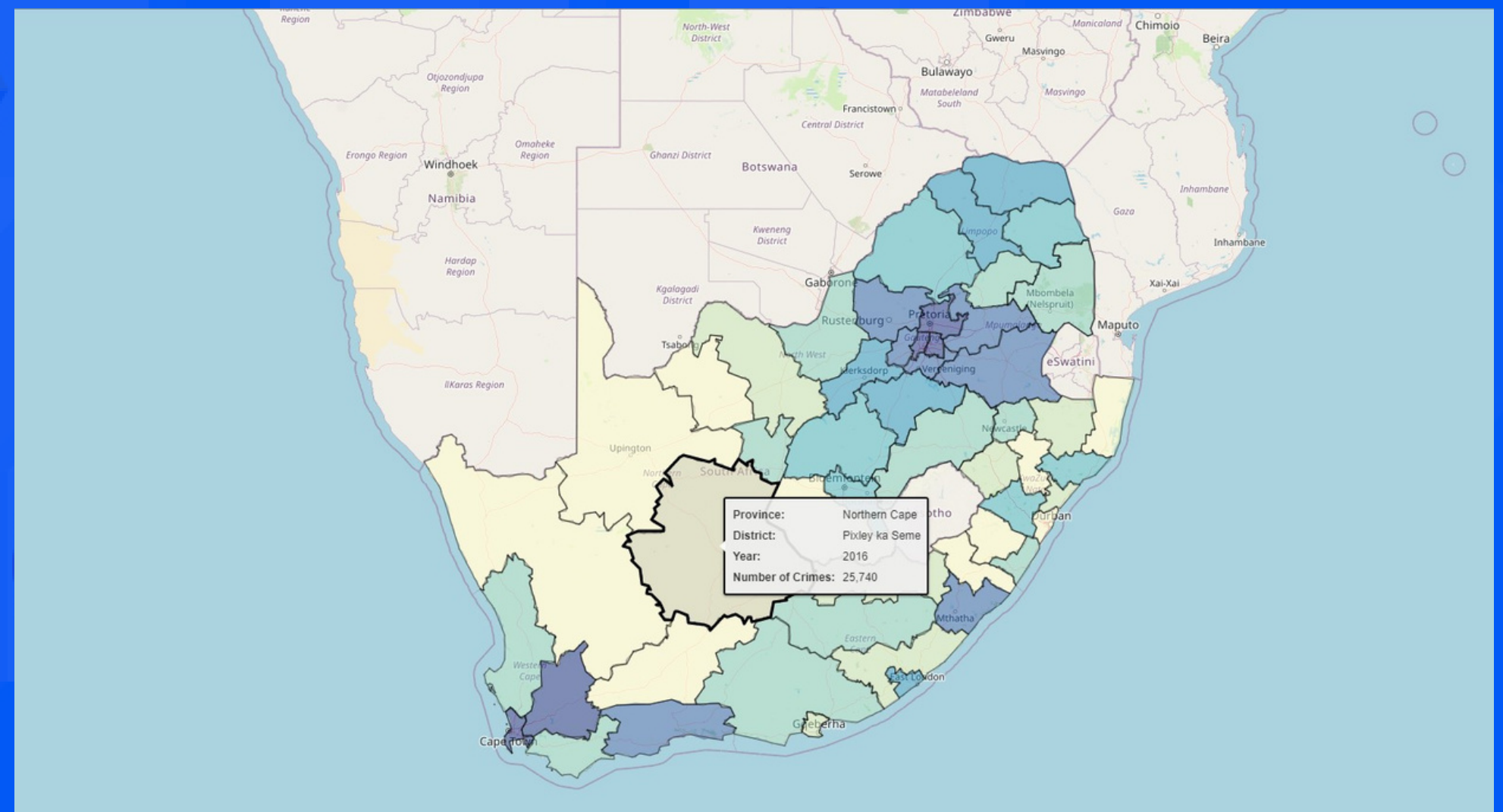


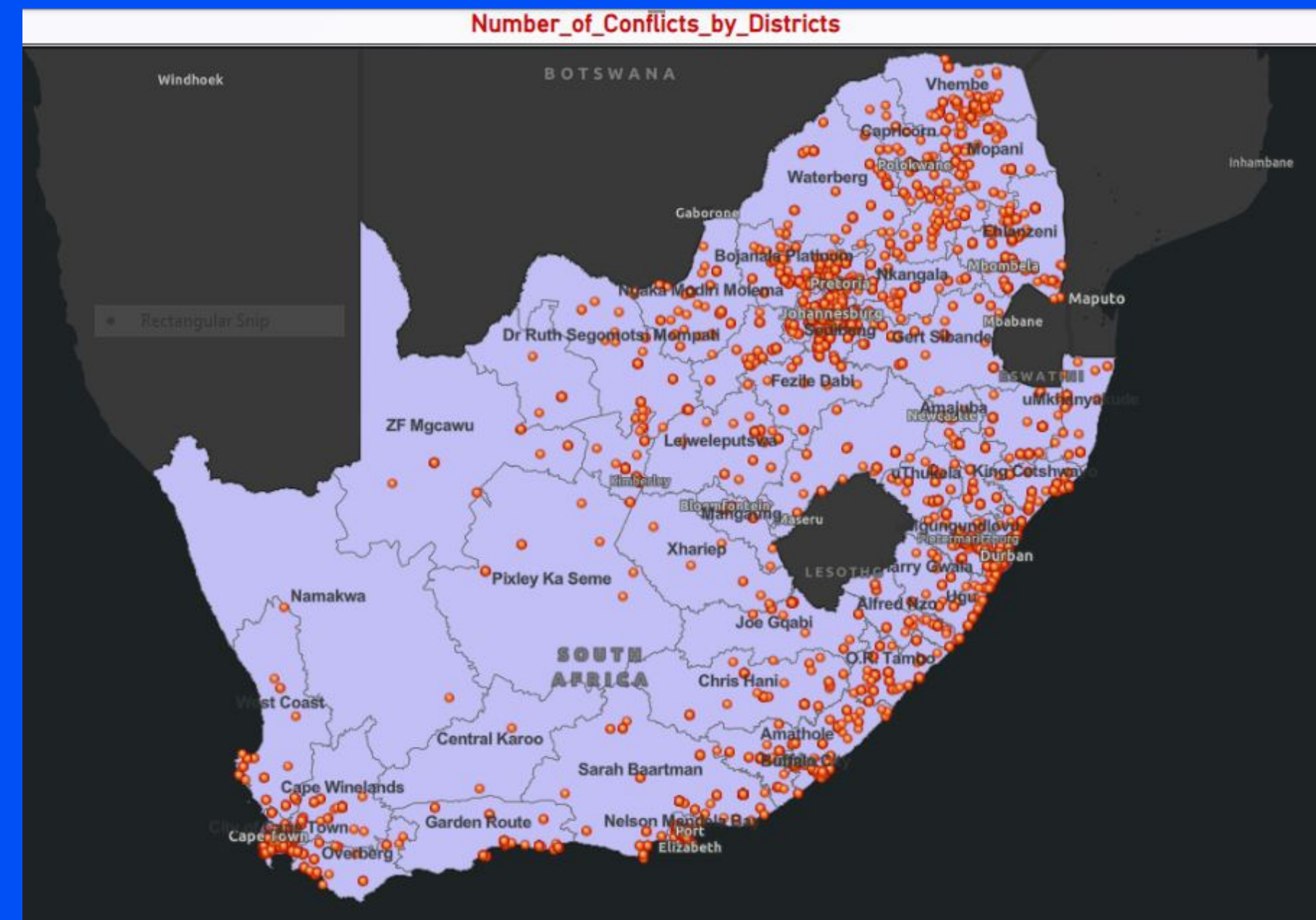
Types of Data

DATA SOURCES

Geospatial:

- 'province'
- 'district'
- 'station'





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>



Omdena

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

Model Deployment

- ## MODEL DEPLOYMENT

We deployed the VGG 16 model on the streamlit app.

