Severin Schwarz – 20.11.2024

Base Idea:

Use a Convolutional Neural Network for Multi-object Classification and additional data to make suggestions for points of action.

Use Case 1:

Analysis of traffic situation: Calculating the percentage of transporters or trucks and linking that data to current air quality.

Possible action to take: Reroute vehicles with high pollution impact for potential improvement to air quality. Alternatively, issue a health warning to the population.

Data Origin:

Air Quality - https://aqicn.org/station/@400465/de/#/z/12

Live Feed Traffic - https://service1.its-viennaregion.at/m/itsvr_allwebcams.html

Use Case 2:

Analysis of bought groceries to make better costumer recommendations ("Andere die dieses Produkt gekauft haben, kauften auch..."). Linked data would be the training pictures.

Recommendations: Show the 3 items most likely to be bought additionally.

Data Origin:

https://www.kaggle.com/datasets/aashithakanagala/supermarket-groceries-image-dataset?select=IMG_20220318_180409.jpg

https://www.kaggle.com/datasets/rdileep/few-shot-learning-with-groceries-dataset

Use Case 3:

Calculate the total of bought groceries given a list of prices for each item. This could automate the checkout progress further since not every item needs to be scanned individually.

Data Origin: same as in Case 2

Used technologies:

Multi-class object detector with bounding box regression: Tensorflow, Keras

CNN

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