

Urban computing lab

Final Project

**Is NYC safer with
emerging transportation
and delivery services?**

Andrew Hwang

Problem

Over the past decade, new transportation and delivery services have enhanced convenience but also intensified NYC traffic risks.

The New York Times

Food Delivery Workers,
Overlooked in Life, Are Honored
in Death

'I was terrified': 7 On Your Side investigates
after e-bike hits, injures child

Opinion: NYC cannot wait any longer to
regulate micro-mobility vehicles

FEBRUARY 16, 2024

Commenting on the Comments: Crossing the Street
in the Era of E-bikes, E-Scooters, and Mopeds

June 7, 2024 | 7:26 PM - Updated on June 8, 2024 | 10:18 AM in COLUMNS, OUTDOORS

63

Emerging transportation?

'e-bike', 'e-scooter', 'motorcycle', 'mopeds'

'2-Wheel Vehicles'



Approach



Motor Vehicle Collisions - Crashes

2012 - 2024

2,111,508 rows

29 columns

1. Load dataset into the DataFrame
2. Examine the data set (use head(), info())
3. Make subsets by selecting only the useful columns such as types of vehicle, accident date, accident borough
4. Clean data by using grouping, renaming by types of vehicle (for example bikes, motorcycles, e-scooters will be grouped as '2-Wheel' and sedan, pick-truck, van will be grouped as '4-Wheel')
5. Create pivot table for number of 2-wheel vs 4-wheel accidents by year
6. Normalize data to make it more comparable
7. Create 'number of 2-wheel accidents by year and borough'

Challenge: Data cleaning problem

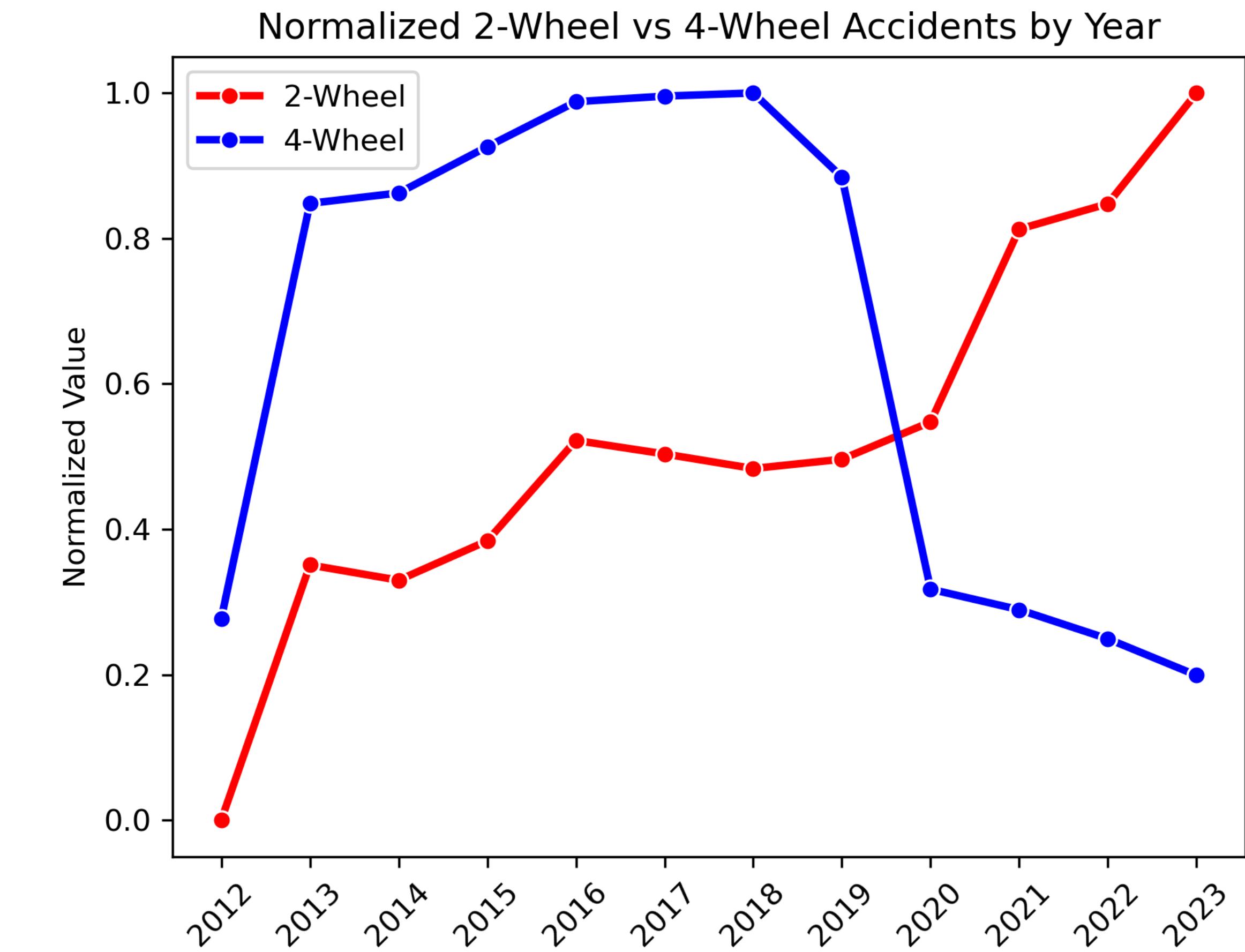
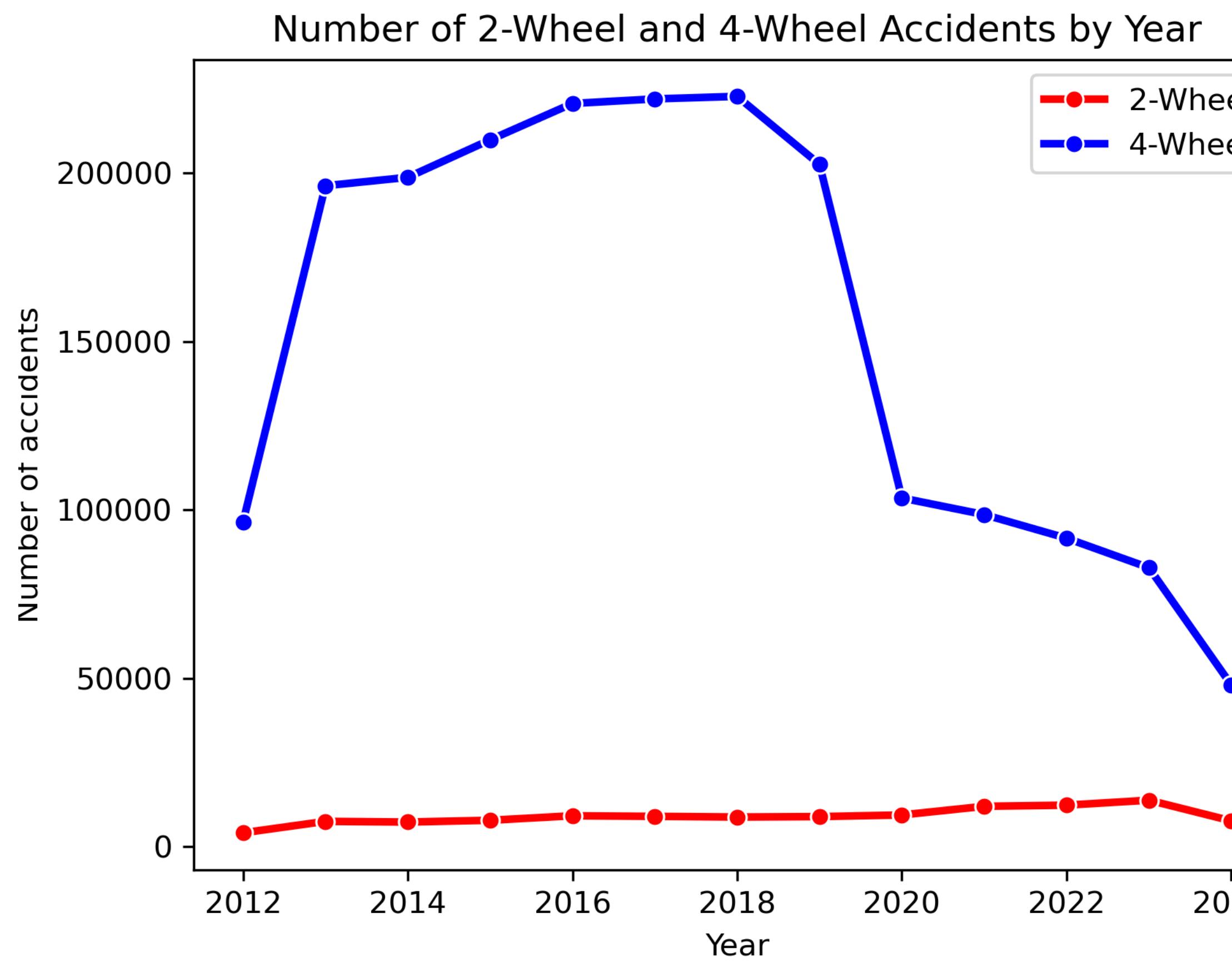
'e-bike',
'e-scooter',
'motorcycle',
'mopeds'

156 Words:

```
['Motorscooter' 'Bike' 'E-Bike' 'Motorcycle' 'E-Scooter' 'Moped' 'scooter'  
'Motorbike' 'MOPED' 'Minicycle' 'Scooter' 'e bike uni' 'E-bike'  
'MOTOR SCOO' 'SCOOTER' 'MOPAD' 'Dirt Bike' 'E scooter' 'E-SCOOTER'  
'50cc Scoot' 'moped' 'kick scoot' 'Minibike' 'ESCOOTER S' "'lime mope"  
'REVEL scoo' 'gas scoote' 'Gas scoote' 'Motorscoot' 'Mopd' 'gas mo ped'  
'SCOOTER GA' 'Gas Scoote' 'e-scooter' 'MOPED 150C' '50CC SCOOT'  
'DIRT BIKE' 'MOTORSCOOT' 'E SCOOTER' 'E Bike w p' 'E-scooter'  
'GAS SCOOOTE' 'ebike' 'E-BIKE' 'E-UNICYCLE' 'BICYCLE' 'E bike' 'E-Bik'  
'PUSH SCOOT' 'MOPD' 'E bik' 'SCOOT' 'scoot' 'Scoot' 'E BIK' 'E-BIK'  
'Bicyc' 'mopad' 'EBIKE' 'e-bik' 'BICYCYC' 'Mo pa' 'MO PE' 'SCOO' 'scooc'  
'Ebike' 'MOTORCYCLE' 'scoo' 'dirt bike' 'Mopped' 'Lime Scoot'  
'Motor Scoo' 'E BIKE' 'BOOM MOPED' 'moped scoo' 'GAS MOPED' 'Scooter ga'  
'Gas Moped' 'E MOTORCYC' 'MOPPED' 'gas moped' 'Red moped' 'Razor Scoo'  
'REVEL MOPE' 'PEDAL BIKE' 'Bicycle' 'ESCOOTERSI' 'DIRTBIKE' 'REVEL SCOO'  
'gas bicycl' 'Moped clas' 'dirtbike' 'Dirtbike' 'scooter ga' 'Scooter no'  
'Motor scoo' 'MO PED' 'Revel Scoo' 'Moped scoo' 'MOPET' 'M0ped'  
'Moped bike' 'motor scoo' 'E-Unicycle' 'Mopoed' 'UNICYCLE' 'Dart bike'  
'Mop Pad' 'CITIBIKE' 'MOPED SCOO' 'motorcycle' 'gas bike' 'e scooter'  
'Push scoot' 'RAZOR SCOO' 'uni e-bike' 'Moped elec' 'motorbike'  
'ESCOOTER' 'e-bike' 'Moped Scoo' 'mopd' 'push scoot' 'Razor scoo'  
'Dirt bike' 'E-bik' 'E Bik' 'Mopen' 'e-BIK' 'E/BIK' 'e BIK' 'e bik'  
'mopet' 'MOPED/SCOO' 'eScoo' 'SCOOTER/MO' 'e-BIKE' 'Siting mop'  
'escooter' 'SCOOTER SI' 'E Bike' 'E- SCOOTER' 'SCOOTER BI' 'Scooter/Mo'  
'black mope' 'MOTO-SCOOT' 'MOPED GAS' 'SCOOTER (G' 'MOPED CLAS'  
'Kick Scoot' 'MOP' 'Mopad' 'unicycle' 'Gas bicycl' 'LIME SCOOT'  
'bmw moped']
```

Finding

2-Wheel related accidents are rapidly increasing.



Finding

NYC's 4 boroughs show a clear upward trend in accident

