Mobike, Bring Bike Back to City

mobike
摩拜单车

UNWGIS 2018

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Mobike is

"A Gift for the world"
-- Hu Weiwei

"A Genius Innovation of China"
-- Wang Xing

Leader in Dock-less Public Sharing Bicycle

The Growth of Mobike

Jan 2015
Startup

April 2016
Shanghai

Aug. 2016
Beijing

Nov, 2016
Guangzhou

March, 2017
Singapore

April, 2017
Daily Trips > 20M

Jun, 2017
100 city Manchester

Nov, 2017
200 City Berlin

The Growth of Mobike

Berlin

London

Milan

Washington D.C.

Beijing

Sapporo

Chengdu

Shanghai

Guangzhou

Shenzhen

Singapore

Sydney

From an idea to popular traffic mode

mobike

Operating

8 million bikes

in more than

200 cities

of

12 countries

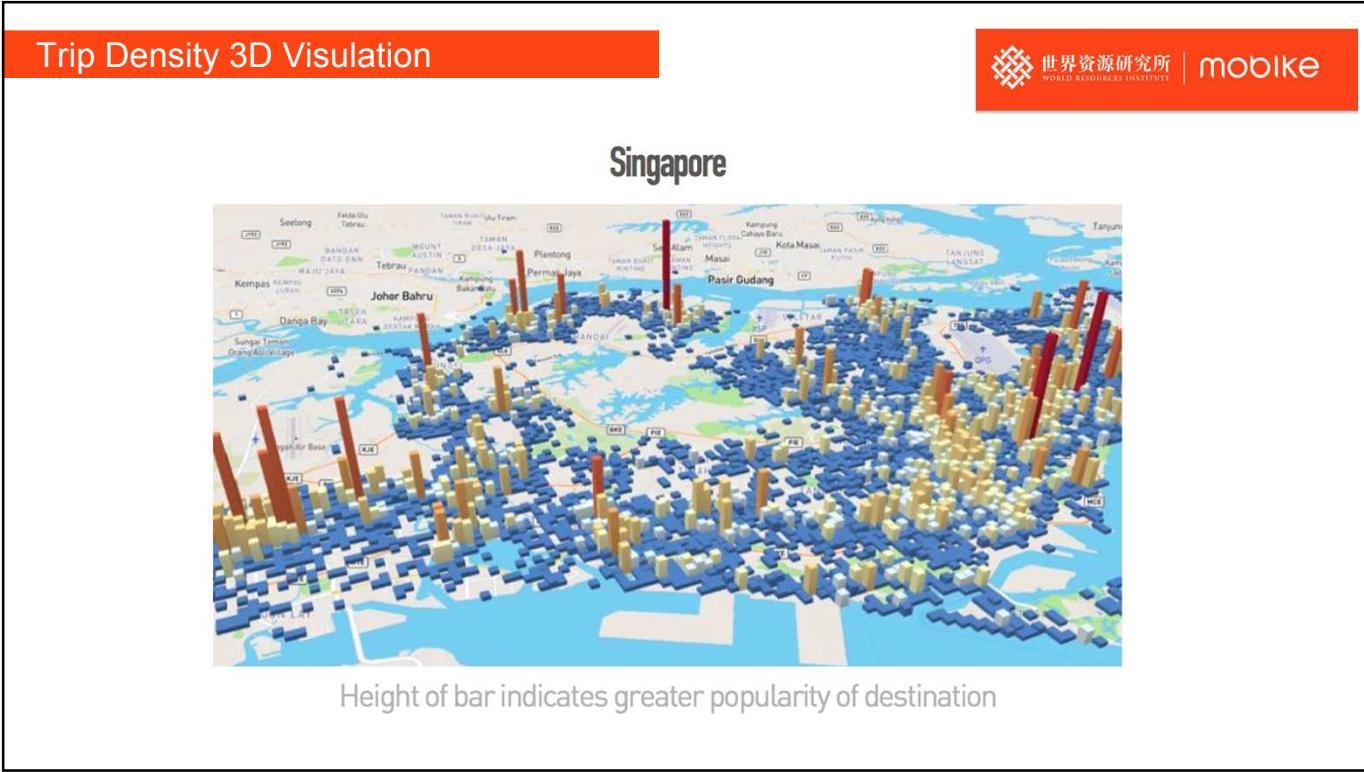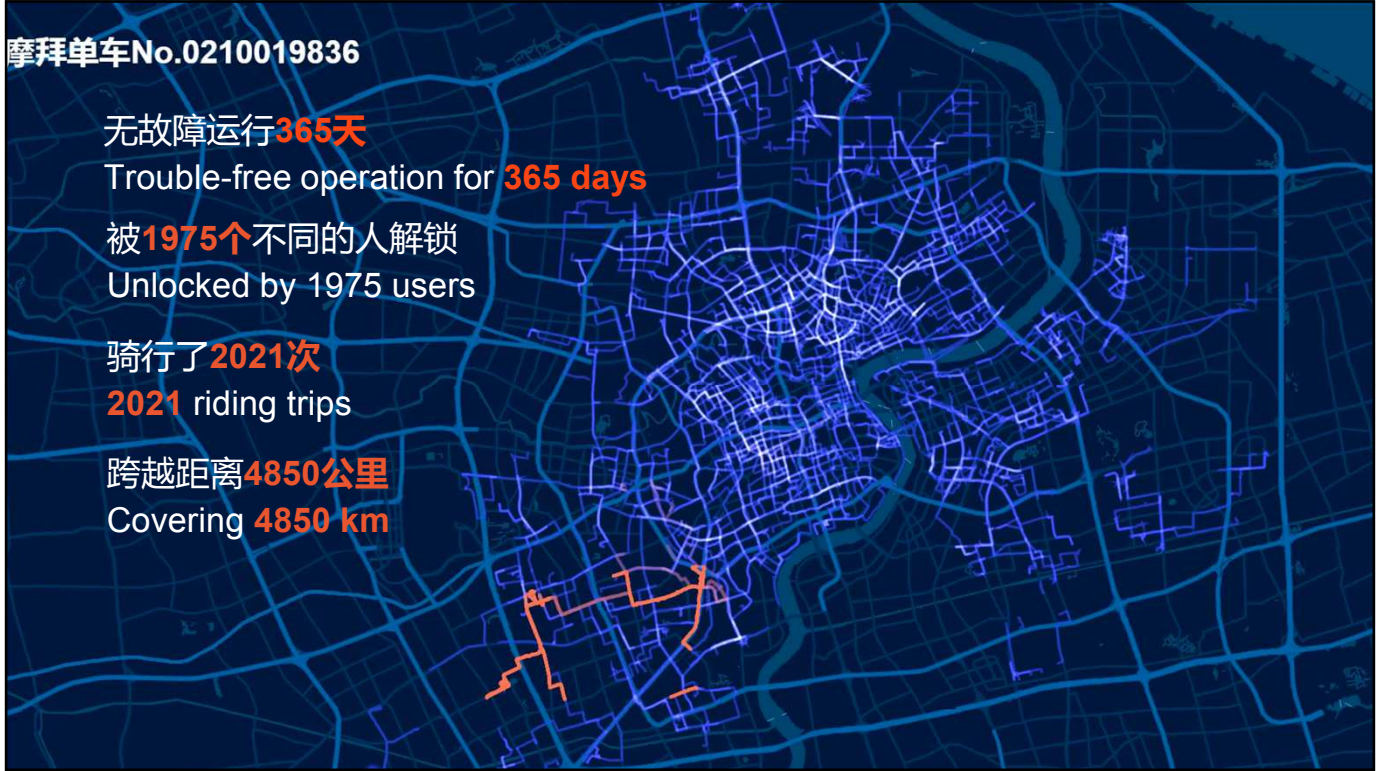## Major Transportation Method in Daily Life
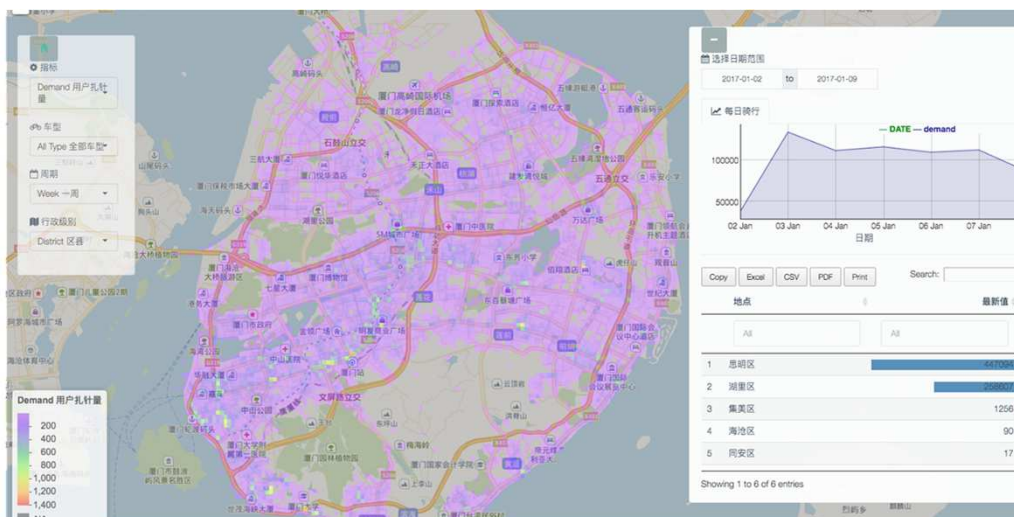
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Daily Trip

Metro ~ 6 M
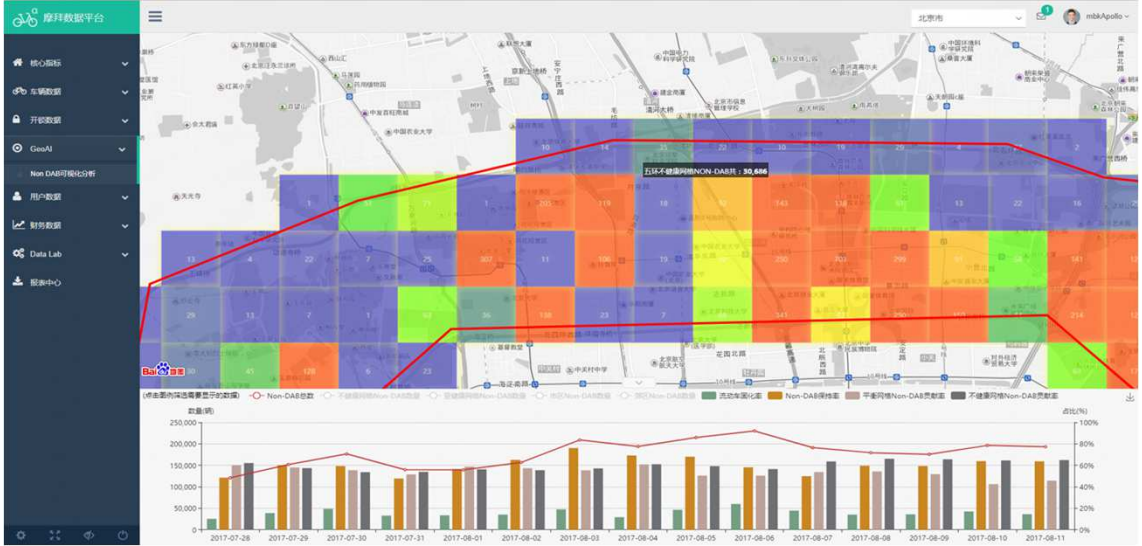Bus ~ 4 M
Bike. ~ 3 M

Mobike Display at Beijing TOCC

21/11/2018

摩拜单车No.0210019836

无故障运行**365天**
Trouble-free operation for **365 days**

被**1975个**不同的人解锁
Unlocked by 1975 users

骑行了**2021次**
2021 riding trips

跨越距离**4850公里**
Covering **4850 km**

Trip Density 3D Visulation

世界资源研究所 WORLD RESOURCES INSTITUTE | mobike

Singapore

Height of bar indicates greater popularity of destination

Technique
(related to GIS)

Spatial Statistic Tool: "Compass"

The Magic Cube Dashboard

Comparable Visualization
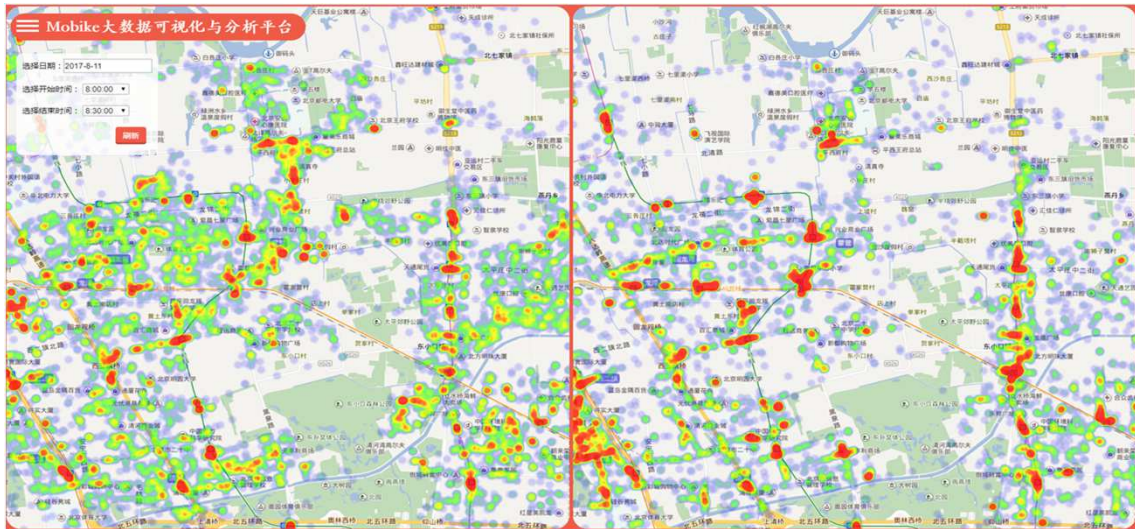
Competitor Monitoring
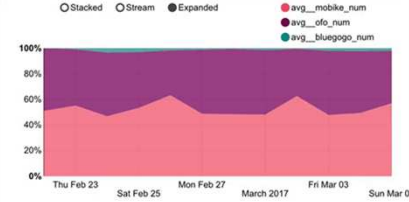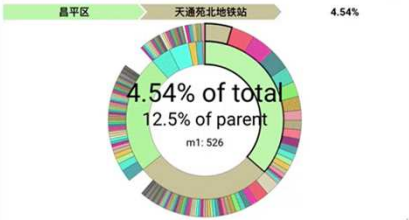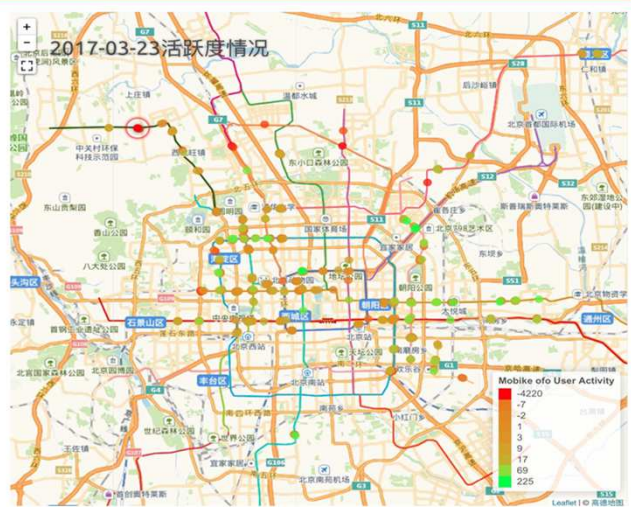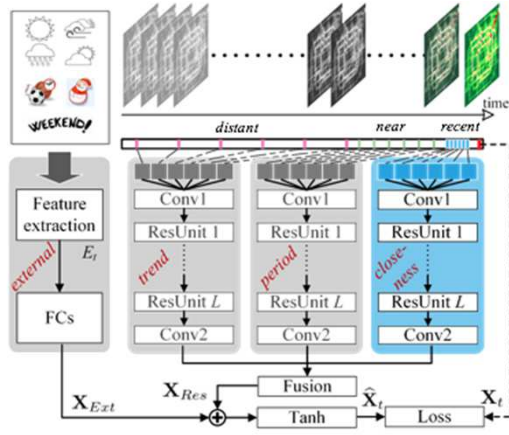

Detect the Hot Spot
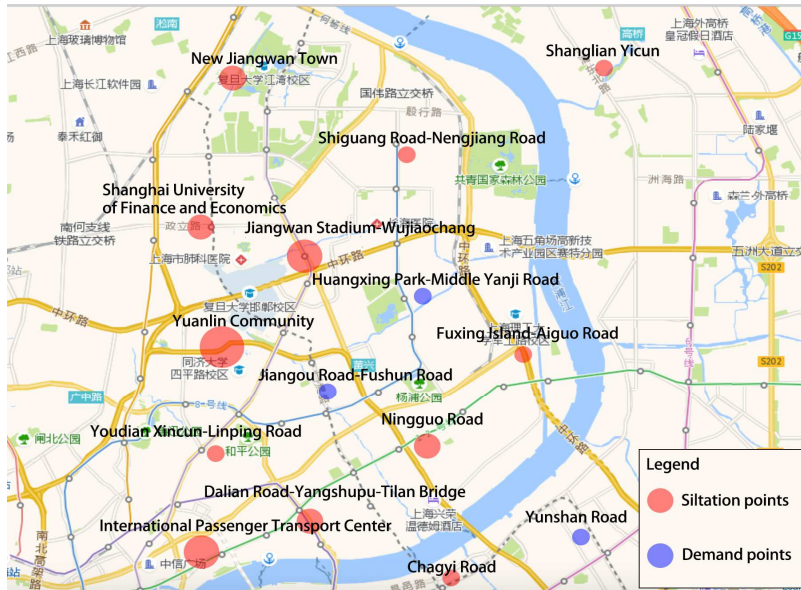
The Distribution of Bicycles' Siltation and Demand Points during Workdays in **Yangpu Distric**t, Shanghai
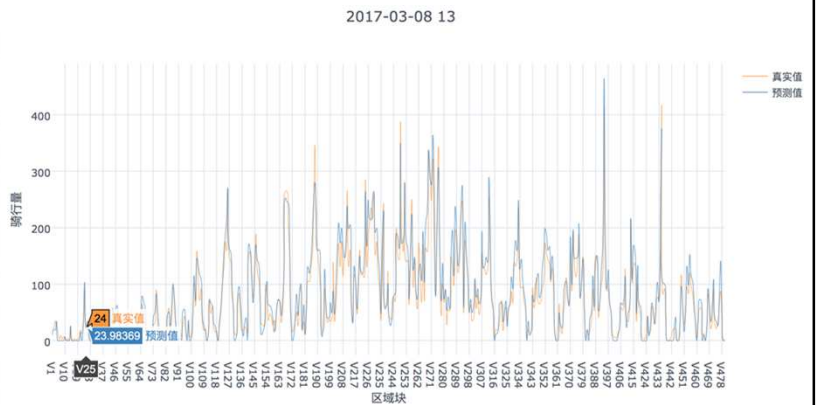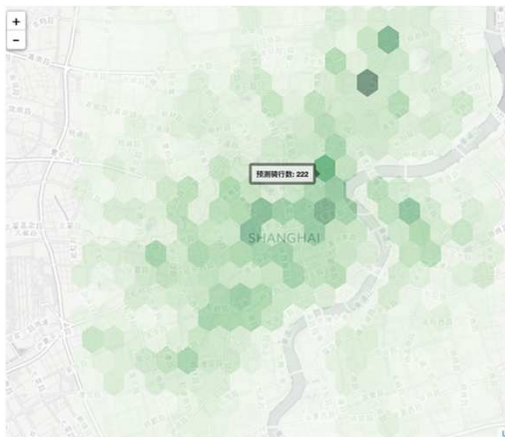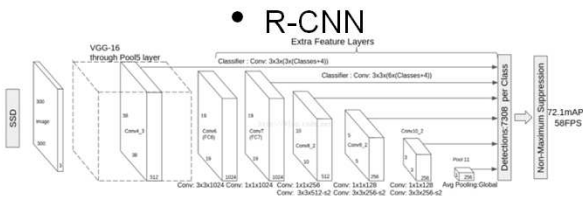
Deep Learning in Solving Spatial Problem

$$\mathbf{X}_{Res} = \mathbf{W}_c \circ \mathbf{X}_c^{(L+2)} + \mathbf{W}_p \circ \mathbf{X}_p^{(L+2)} + \mathbf{W}_q \circ \mathbf{X}_q^{(L+2)}$$

$$\widehat{\mathbf{X}}_t = \tanh(\mathbf{X}_{Res} + \mathbf{X}_{Ext})$$

Zheng, Yu. "Urban computing: enabling urban intelligence with big data."*Frontiers of Computer Science* 11.1 (2017): 1-3.

Supply-Demand Prediction with CNN on TensorFlow
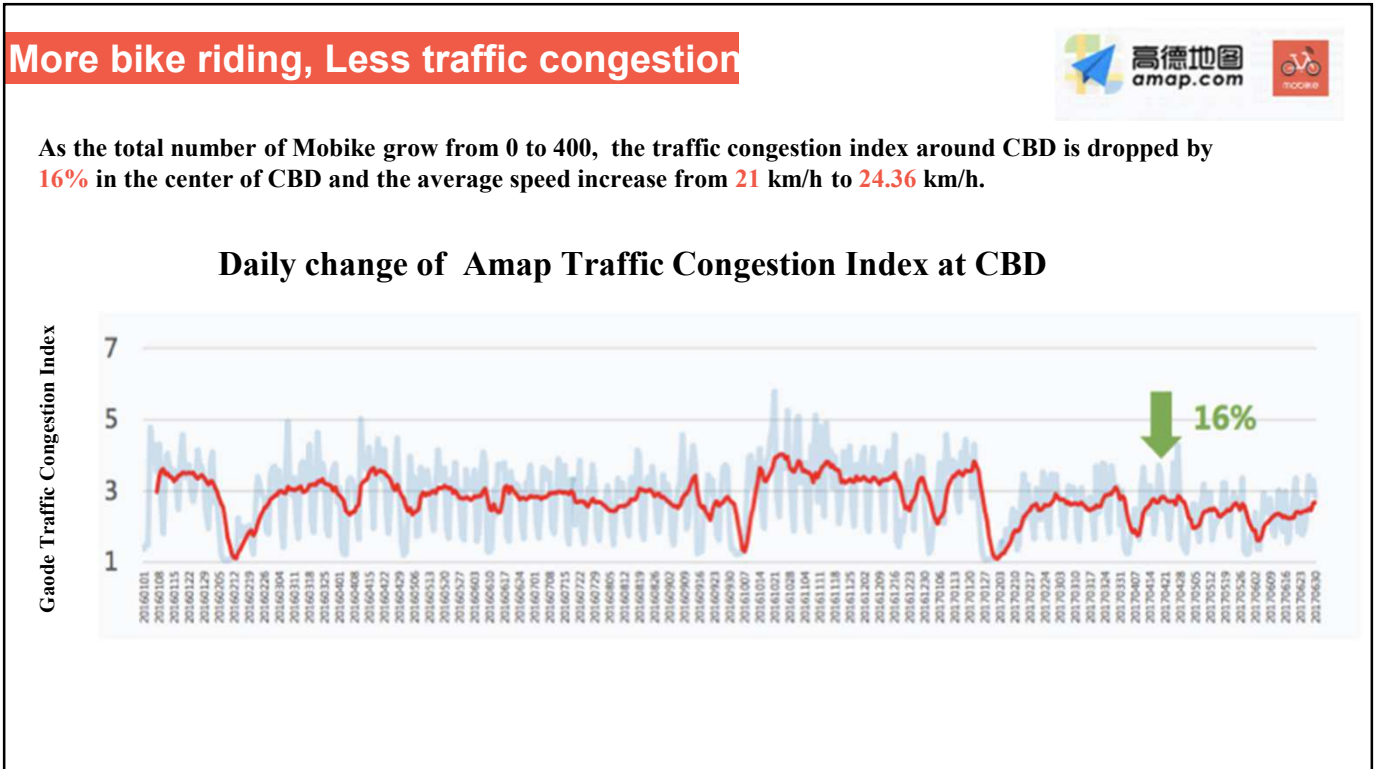
Apply RCNN to Count No. of Bike

- R-CNN

Application of Geofencing

Social Impct

More bike riding, Less traffic congestion

As the total number of Mobike grow from 0 to 400, the traffic congestion index around CBD is dropped by **16%** in the center of CBD and the average speed increase from **21** km/h to **24.36** km/h.

Daily change of Amap Traffic Congestion Index at CBD

The relationship between shared bikes and metro stations (Wuhan)

Top 5 Metro Station:

1. **Hanjianglu**
2. **Dazhilu**
3. **Hanzhengjie**
4. **Wushenglu**
5. **Liuduqiao**

Fill the Gap of public transit service
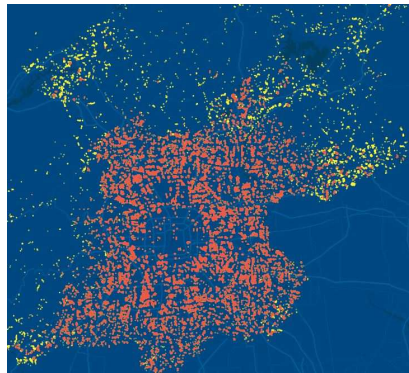
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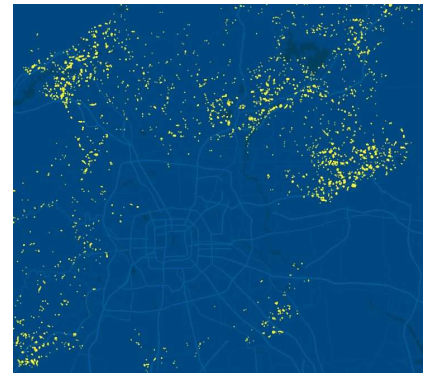A joint study by Baidu Map and Mobike shows shared bikes can fill the gap of public transit.

The prevalence of shared bikes improved convenience of public transport. In Beijing, 92.7% population are covered.

公共交通站点未覆盖盲区分布图

摩拜单车对公共交通站点盲区覆盖分布图

摩拜单车覆盖后的盲区分布图

Data Source：The White Paper about Bike-sharing and city development
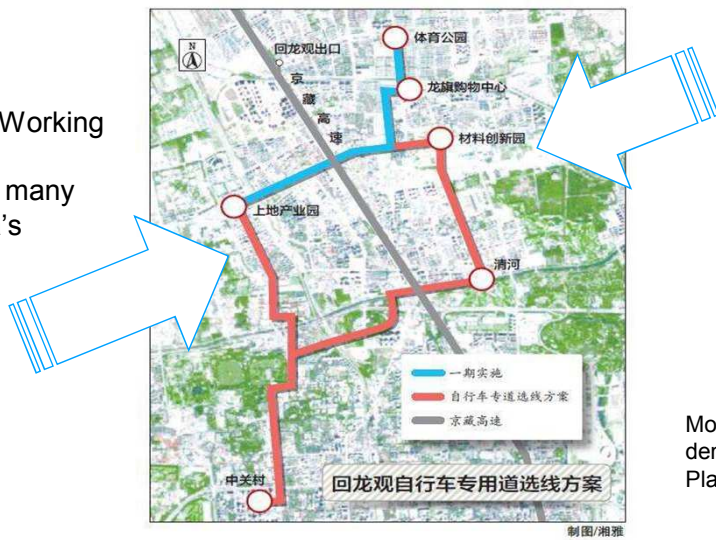
Assist Bike Lane Plan

Planning Bike Lanes based on Sharing-Bikes' Trajectories
(**KDD2017**)

Assist City Planning

The 1st high speed bike lane in Beijing

The Zhongguancun Working Area
(The R&D center of many IT company - "China's Silicon Valley")

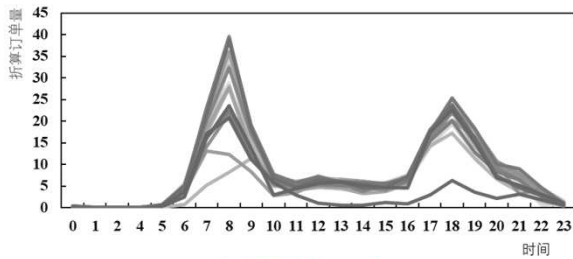The Huilongguan Residence Area (The largest residency in the world – "Sleep Town")

Mobike help provide the riding demand data for Beijing City Plan Academy
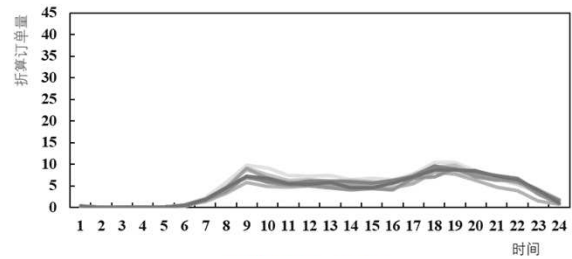
Travel Patterns of Different City/Metro Stations
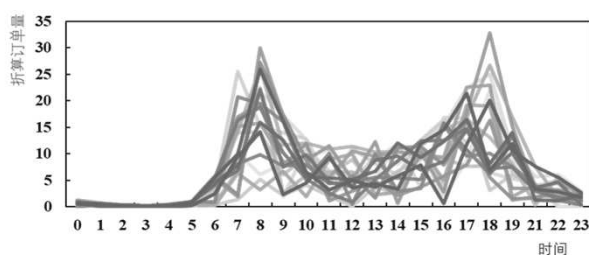
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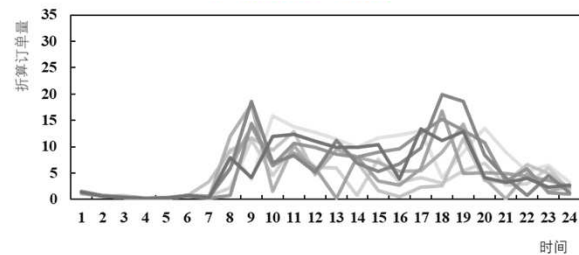
Beijing Shangdi-Weekdays

Beijing Shangdi-Weekend

Guangzhou Xicun-Weekdays

Guangzhou Xicun-Weekend
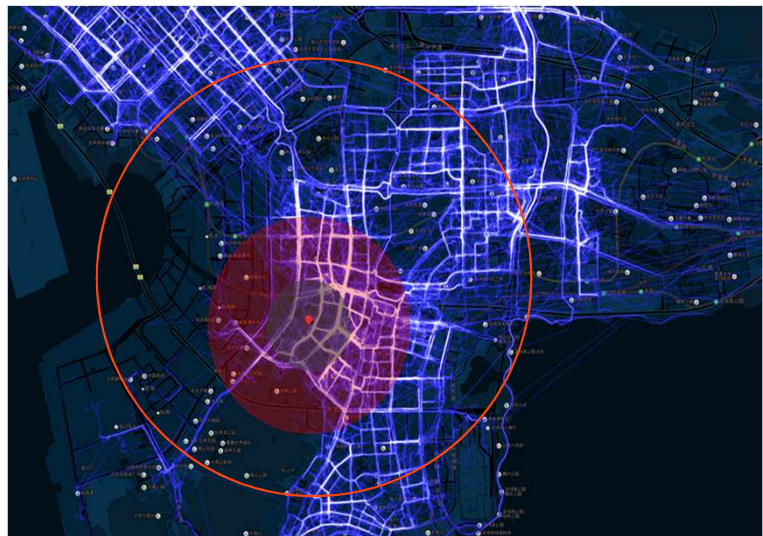

*Data Source：Mobike Orders in July 2017

The Concept of TOD Should Conside Bike

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Collaborate Research with World Bank

. metro station

⬤ 10 min's walking radius

⬤ 10 min's biking radius

◯ Coverage of 85% trips

Shenzhen Nanshan Station

*. Data Source：Data from Mobike Order in July 2017

Environmental Impact

- Travel Distance : 18.2B km (2016.4 -2017.10)

- CO_2 reduction: 4.4M tons

- Money saved on pollution reduction: 192M $

- UN Environment:

  - "Champions of the Earth"

Hu Weiwei get award in Nairobi

HOW CYCLING IMPROVES CITIES

BIKESHARING FURTHERS THE UN SUSTAINABLE DEVELOPMENT GOALS (SDG)

Mobike is working with global NGOs to reach SDGs of sustainable cities & communities (goal 11), climate action (goal 13), and social equality (goal 5, 10), in some specific areas:

Thanks :)