

极海带您探秘地理数据的机器智能之旅

演讲人：  GeoHey · 极海 王昊

跨界互联
数聚未来

第四届中国数据分析师行业峰会

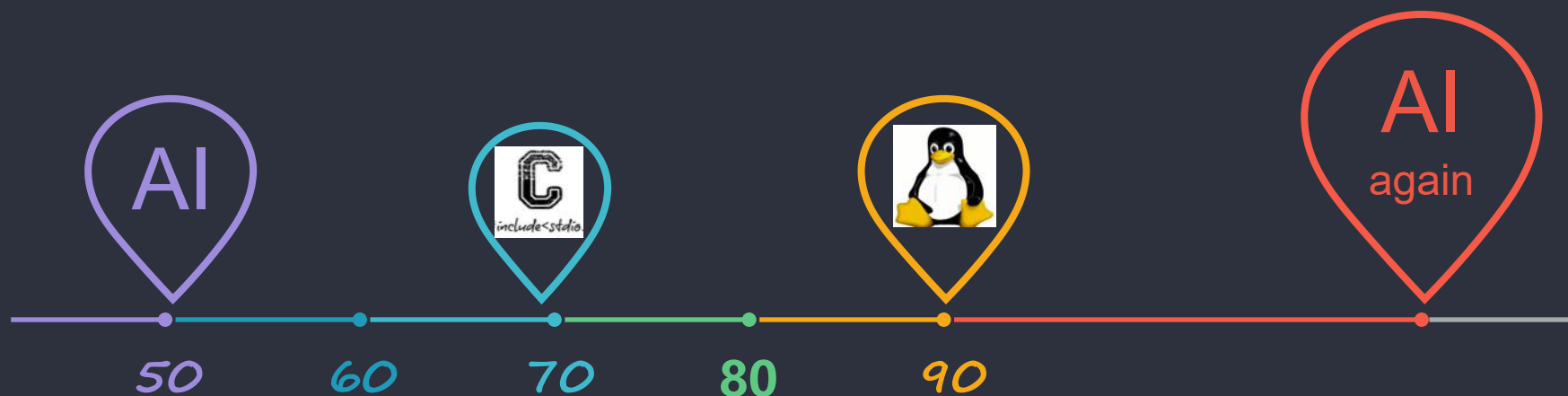
CHINA DATA ANALYST SUMMIT

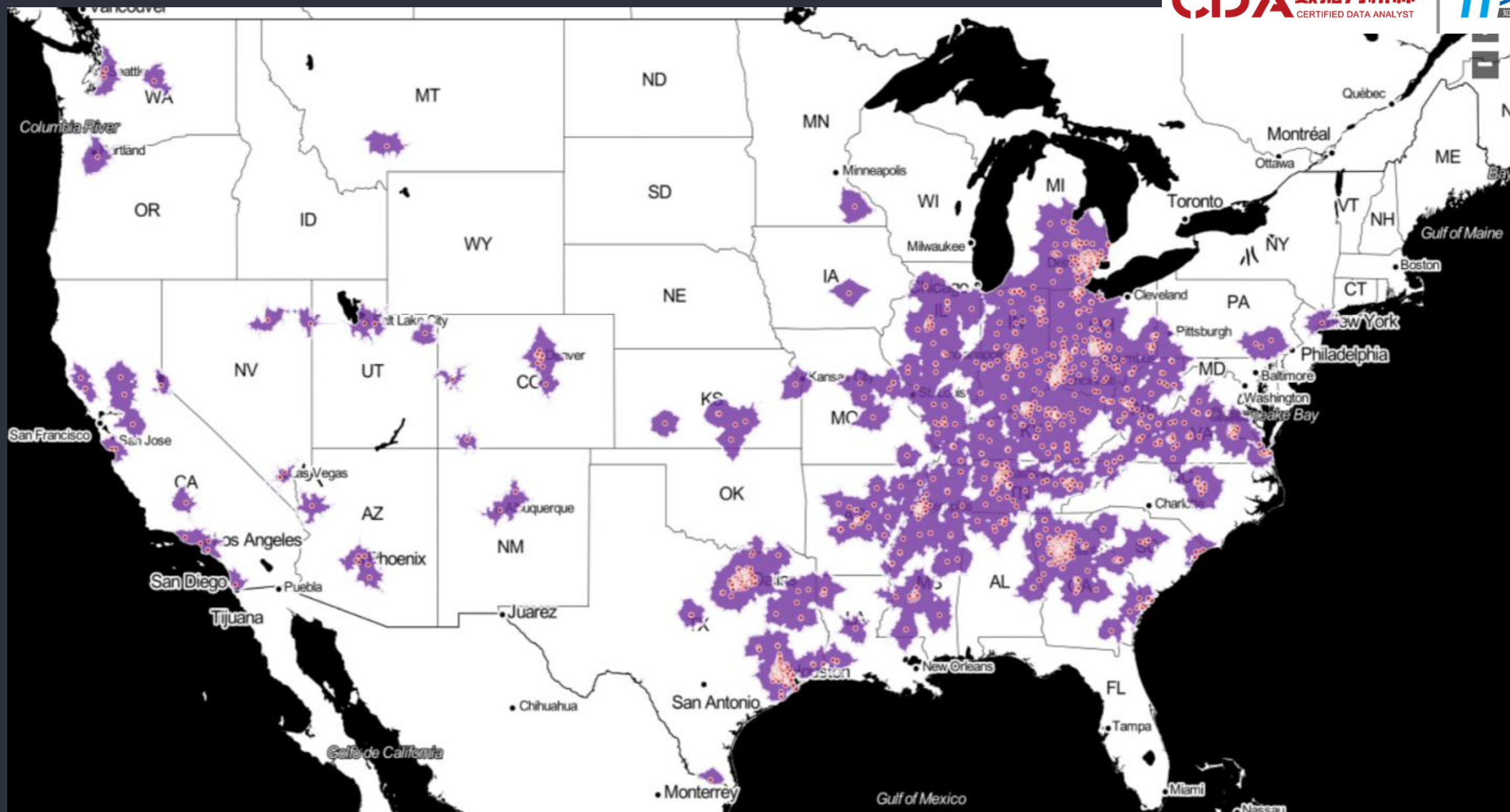
📍 北京 中国大饭店 2017. 07

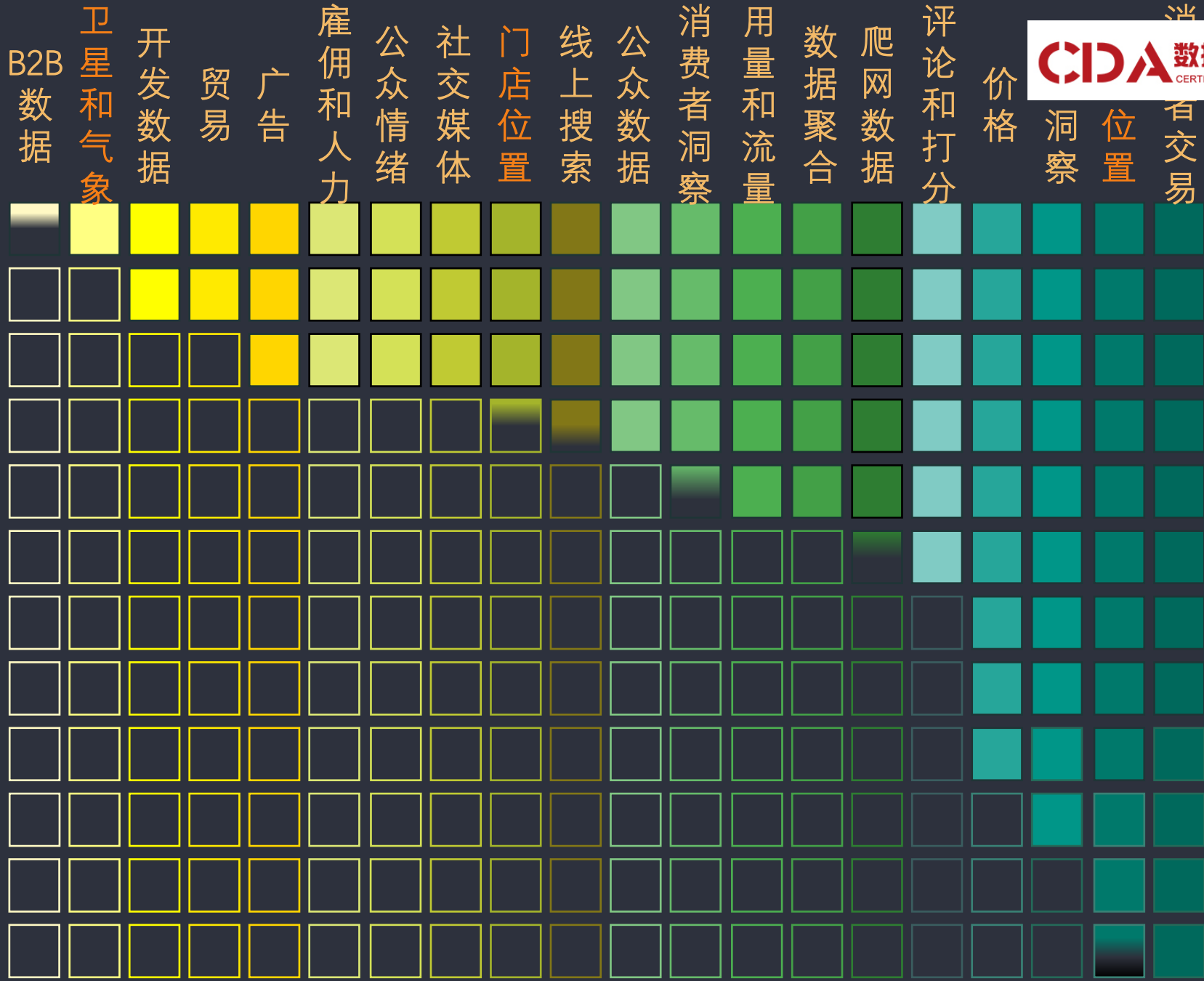


精准是新商业和旧商业的本质区别。

----曾明





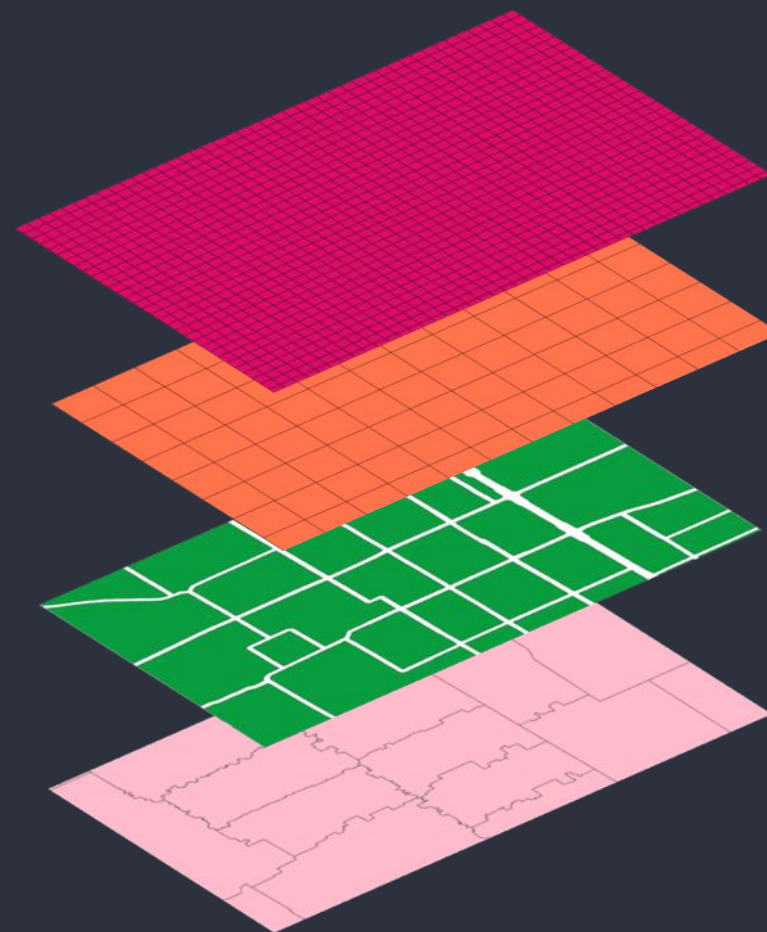
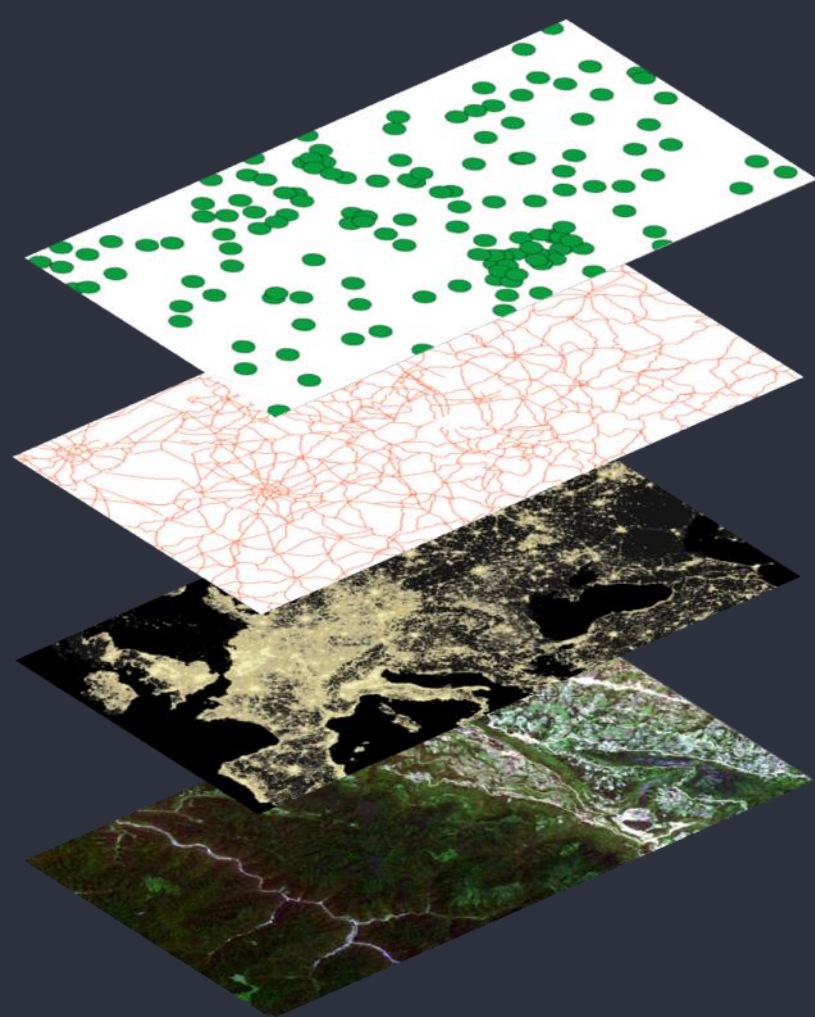


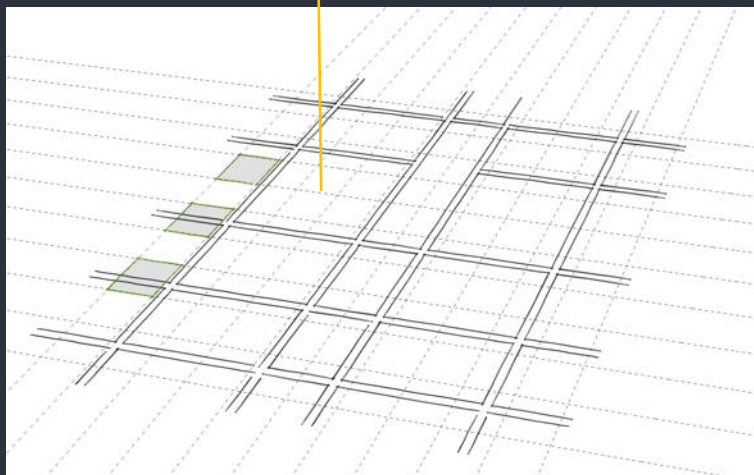


如何将人工智能与地理问题相结合？

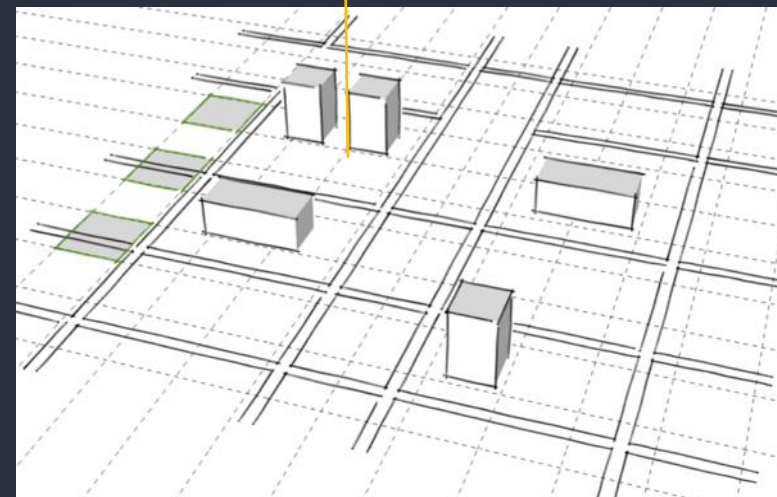


多源数据融合：从位置数据到深度学习的桥梁



$[x, y, z]$ 

● 三维空间坐标

 $[x, y, z] + [\text{位置之上的信息}]$ 

● 多维空间坐标



[0.35, 0.44, 0.01, ..., 0.88, 0.1]

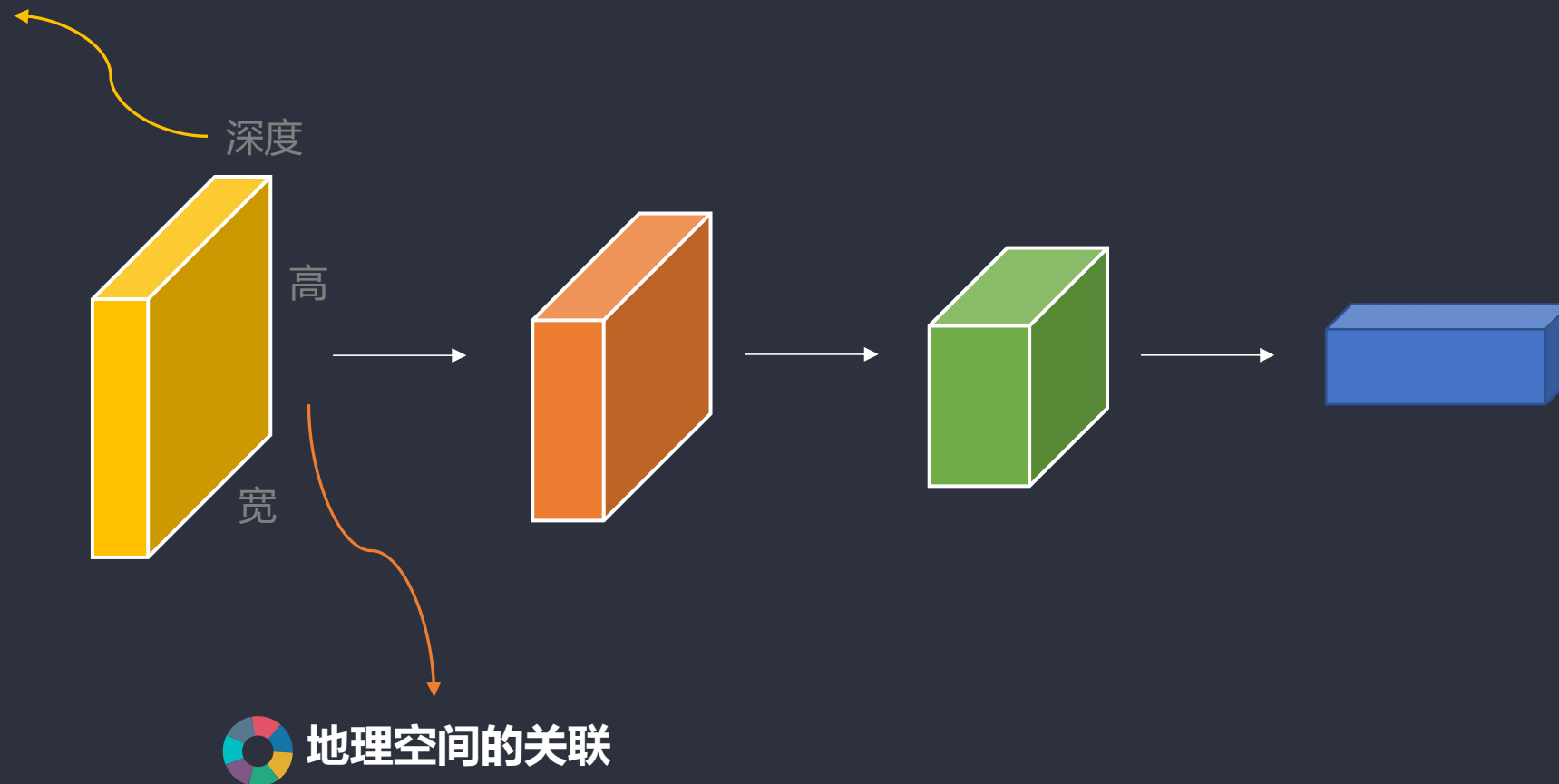


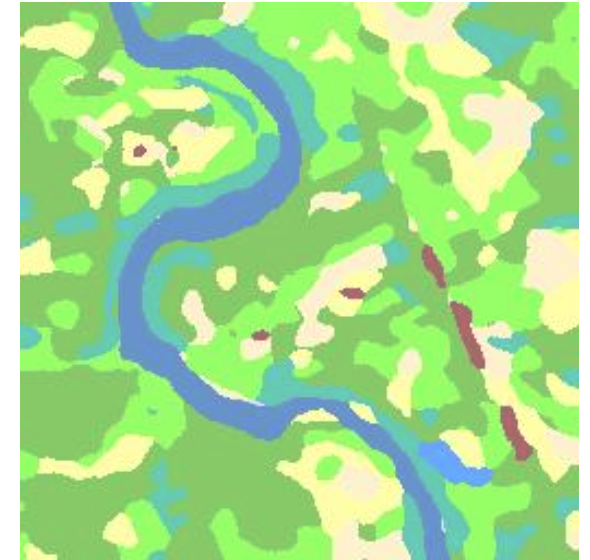
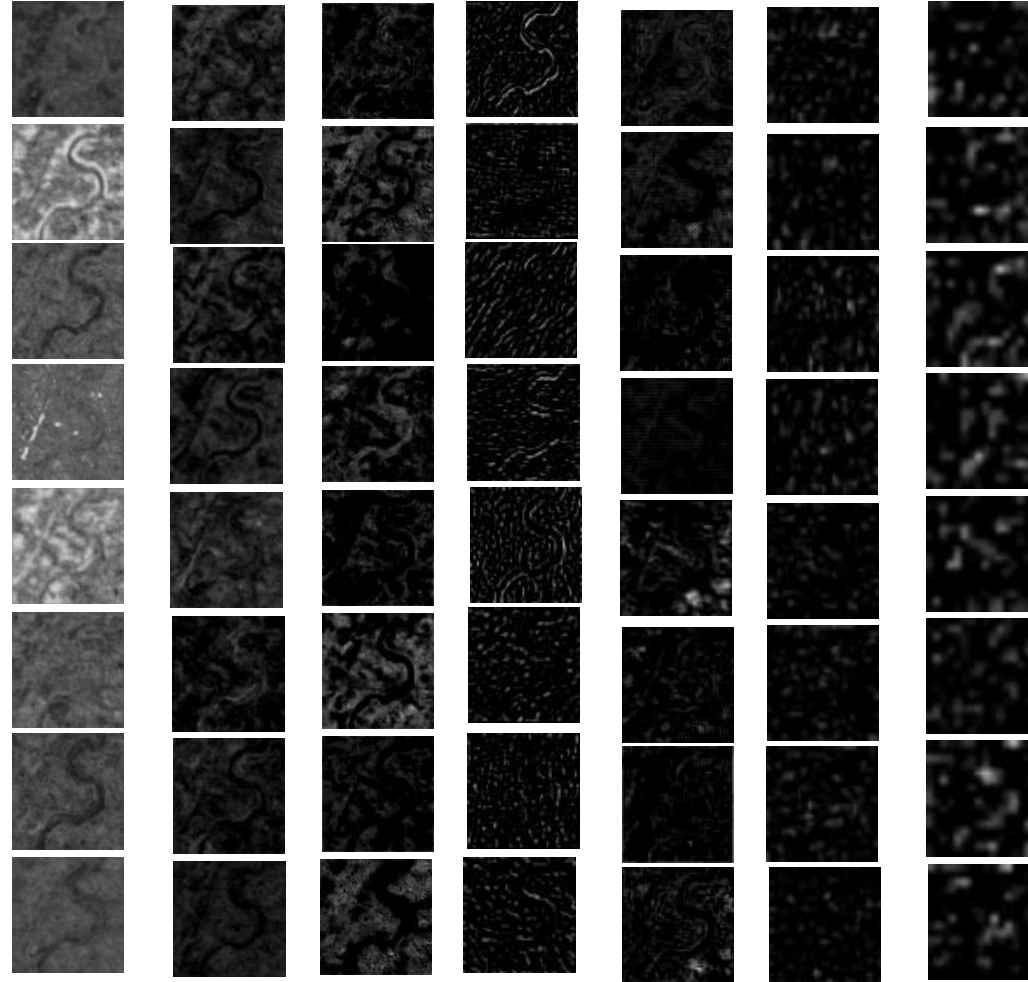
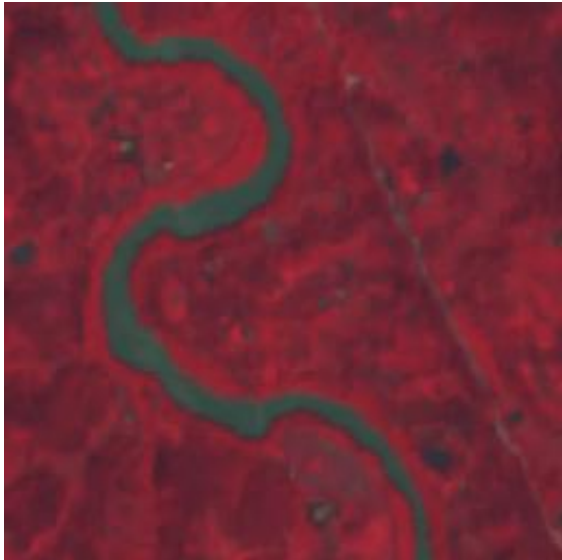
[0.30, 0.48, 0, ..., 0.9, 0.08]



[0.38, 0.34, 0.11, ..., 0.85, 0.11]

地理特征的关联 (POI、人口、土地利用、灯光图、DEM)



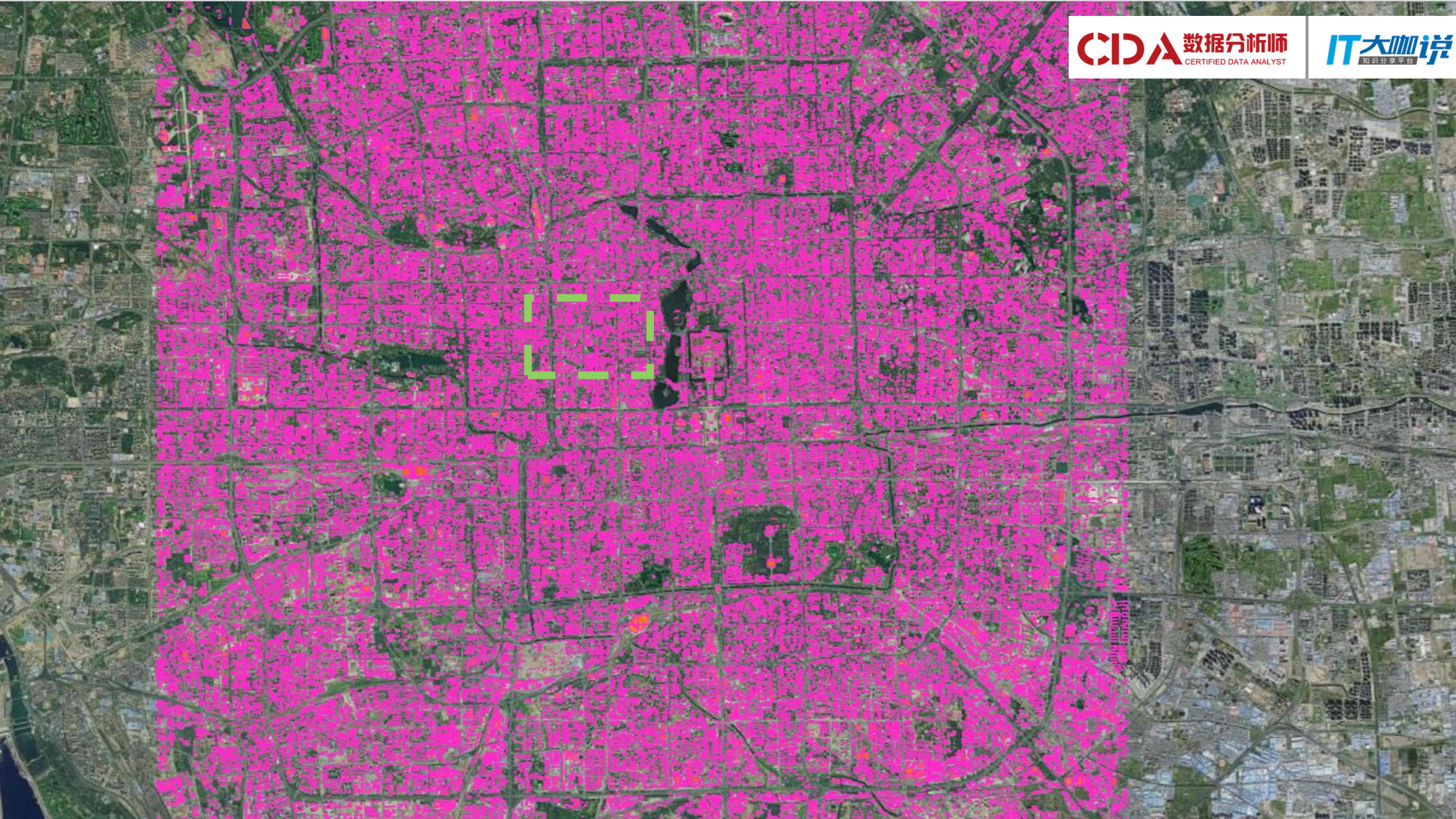




主干道
精度 98.8% , IoU 64.7%

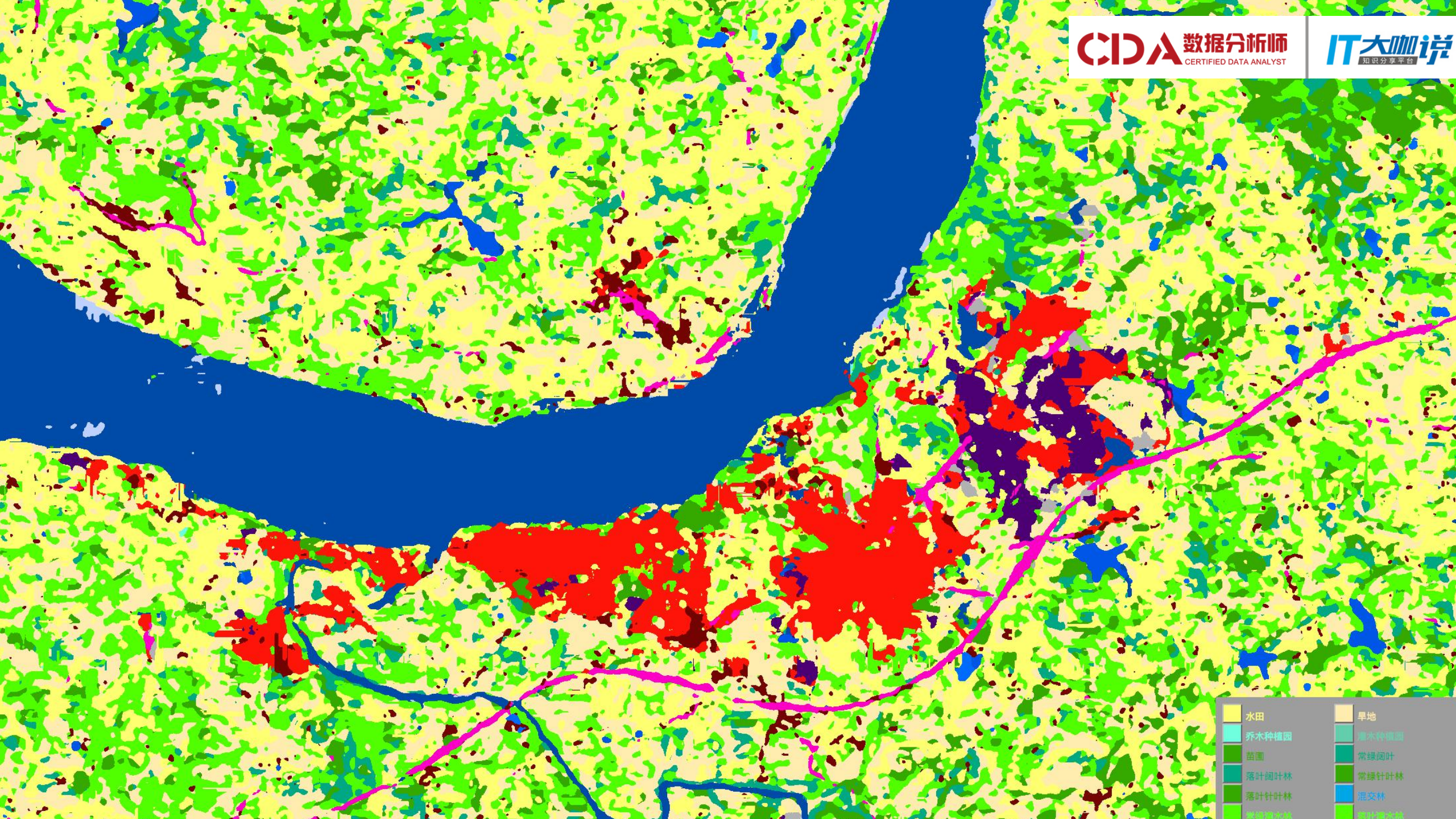


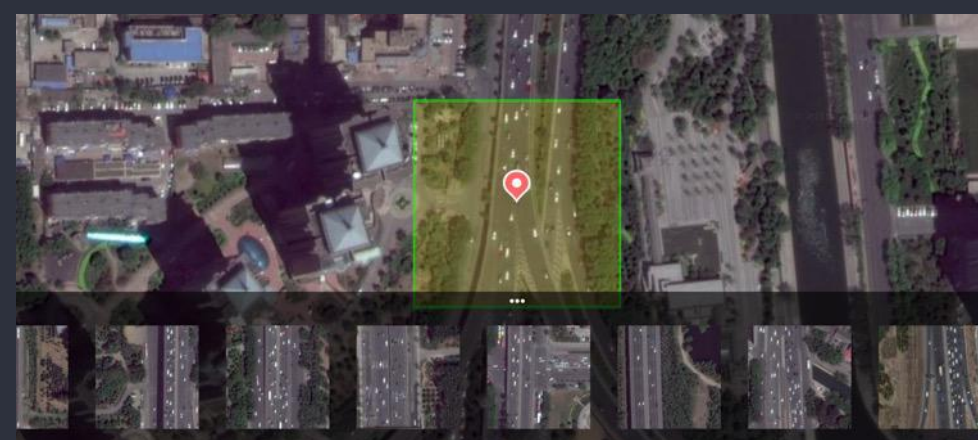
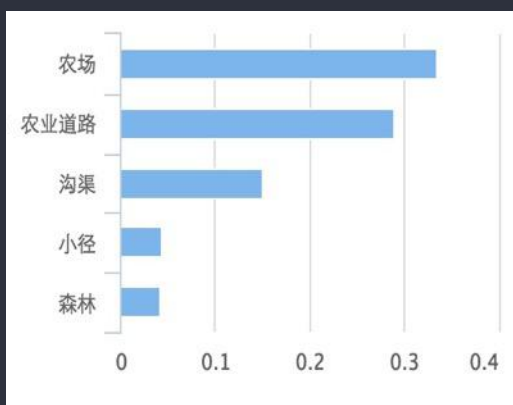
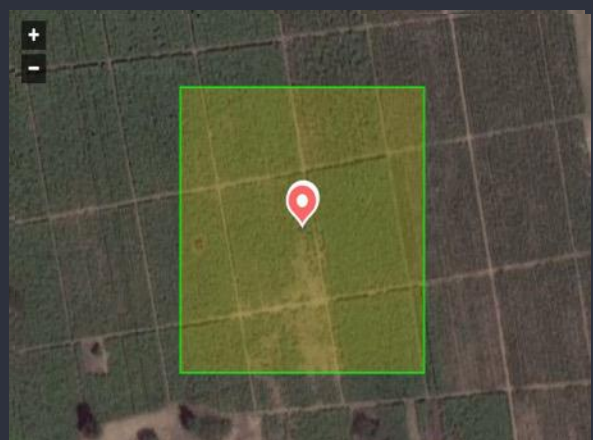
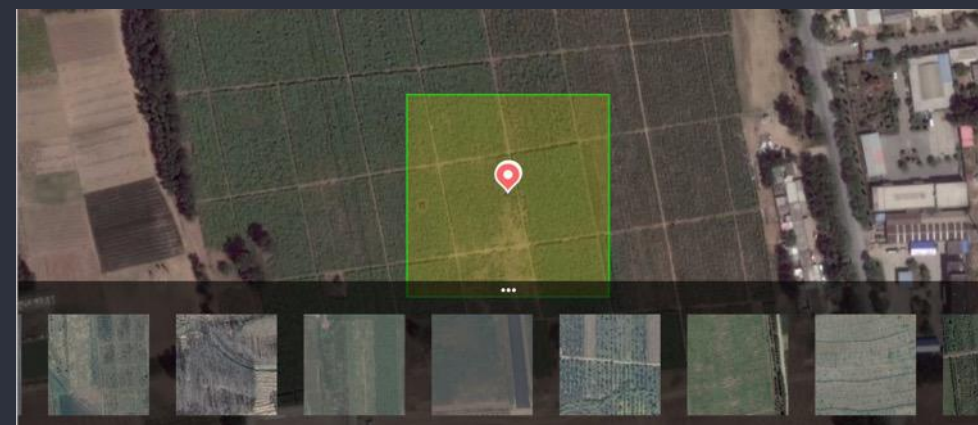
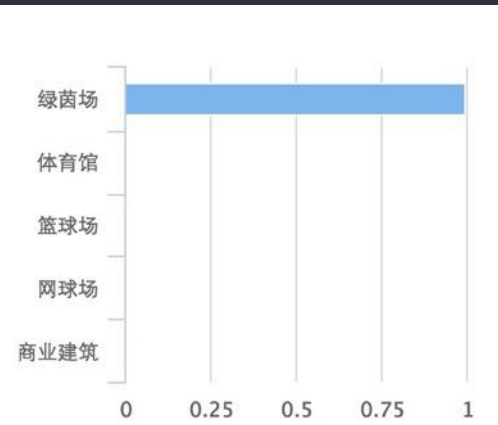
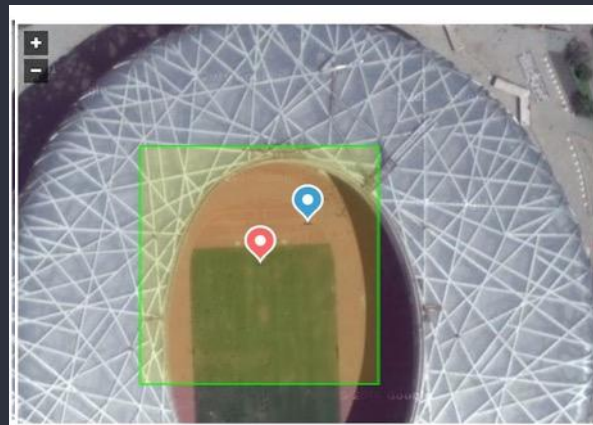
街区道路
精度 95.7% , IoU 56.3%

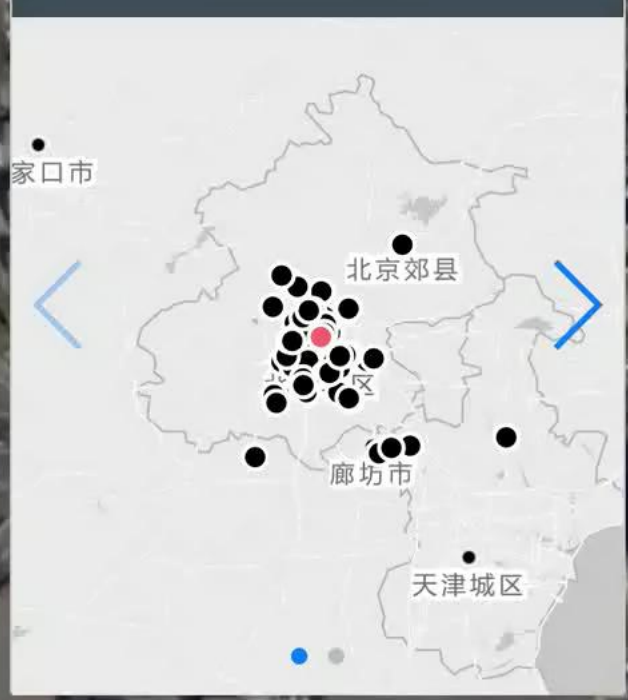
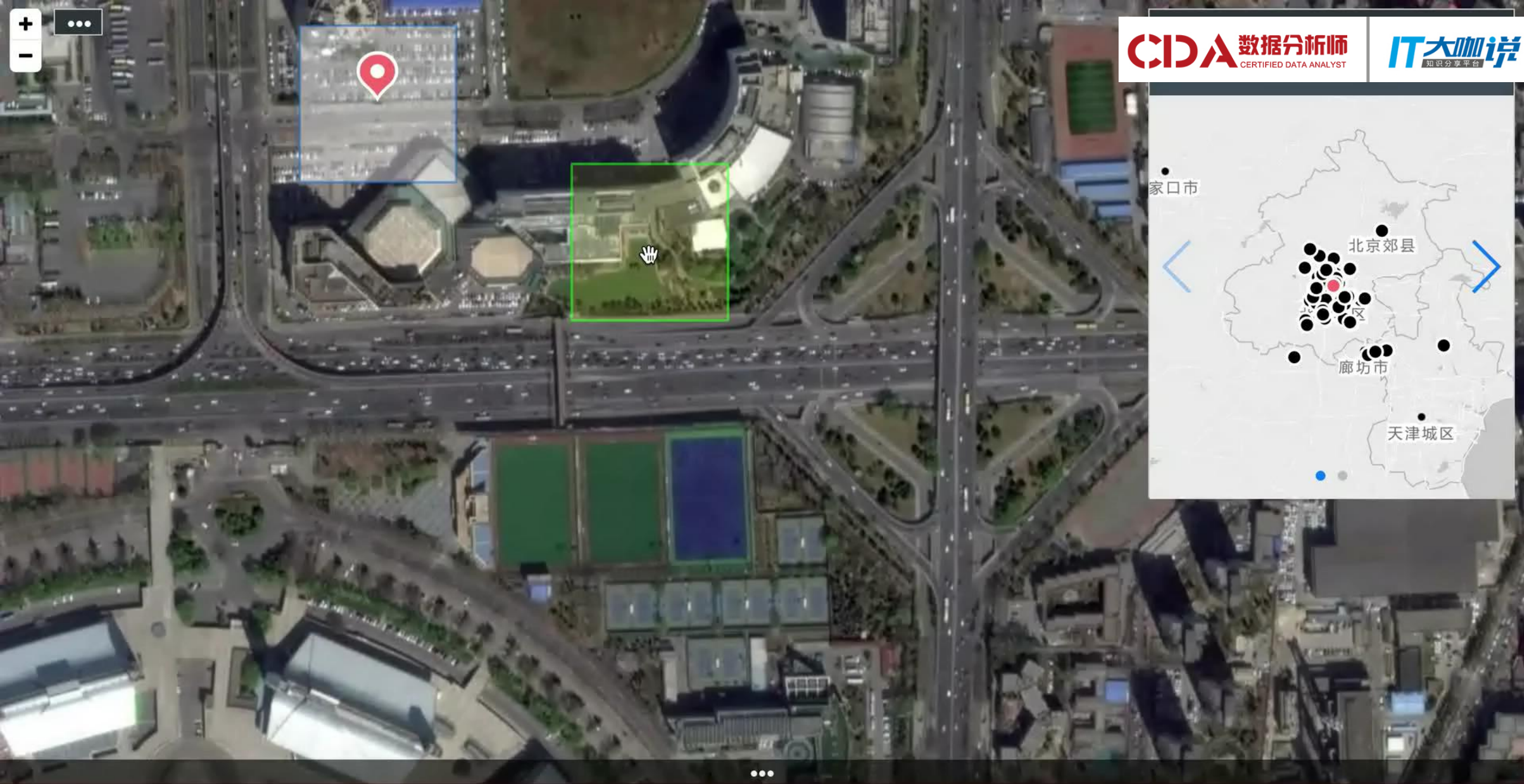


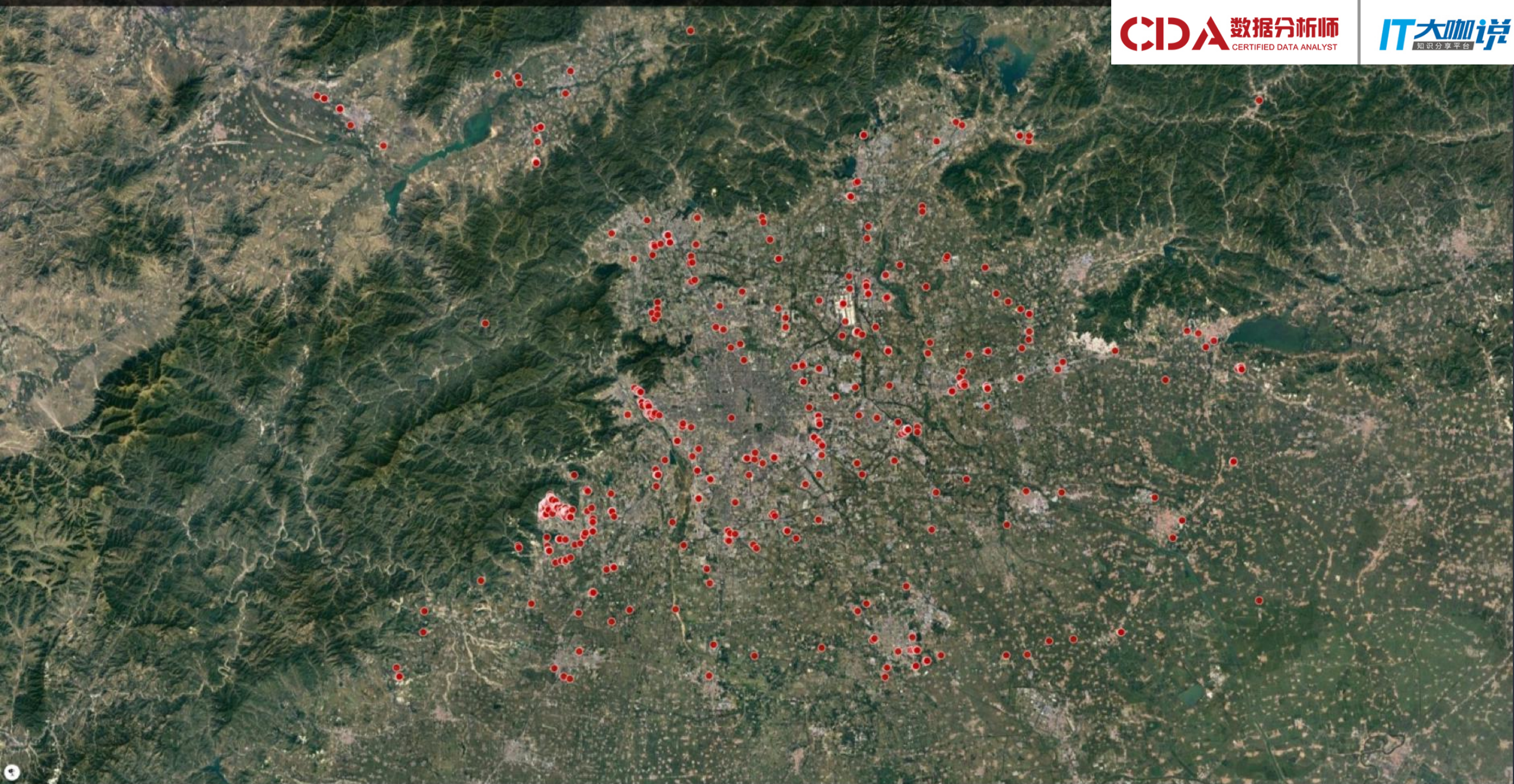
精度92.4%，IoU 64.8%











实地影像







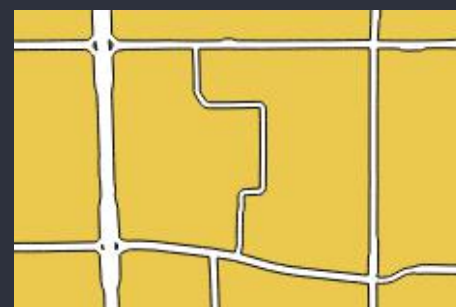
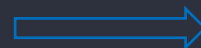
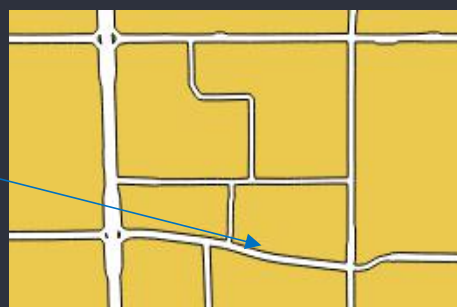
街区

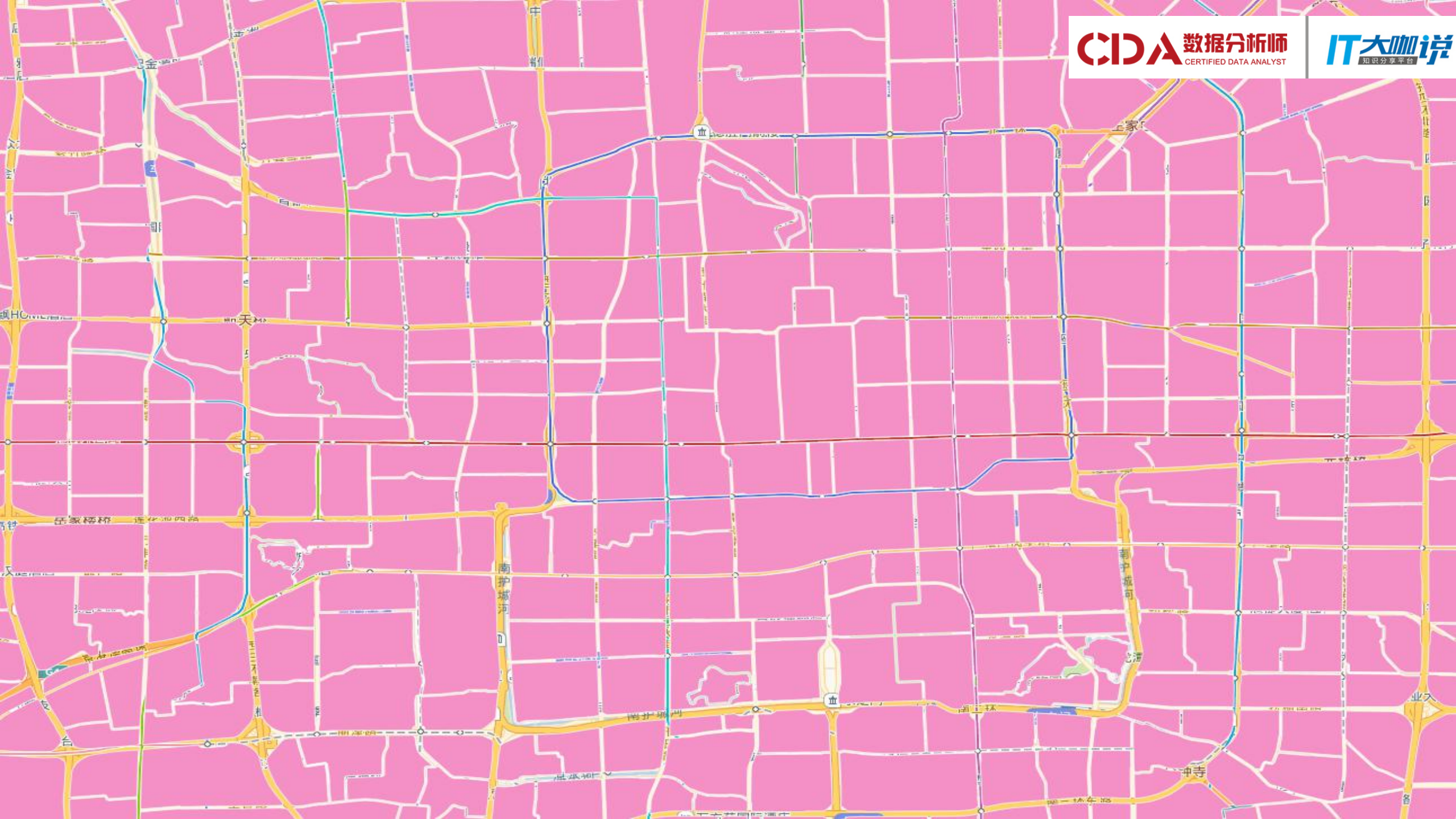
城市里由主要道路围成的一个相对独立的区域

● 街区未分开



● 细碎街区

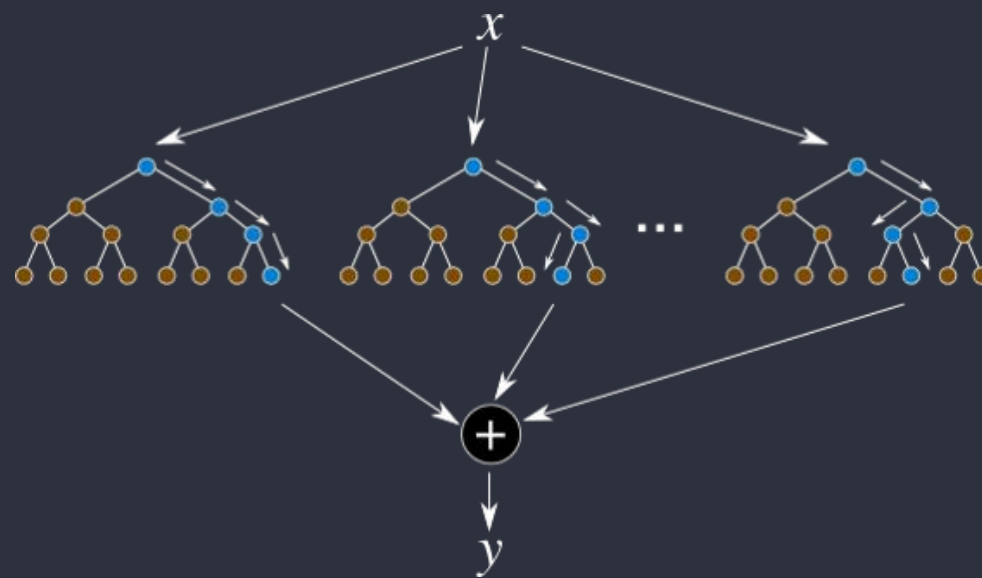
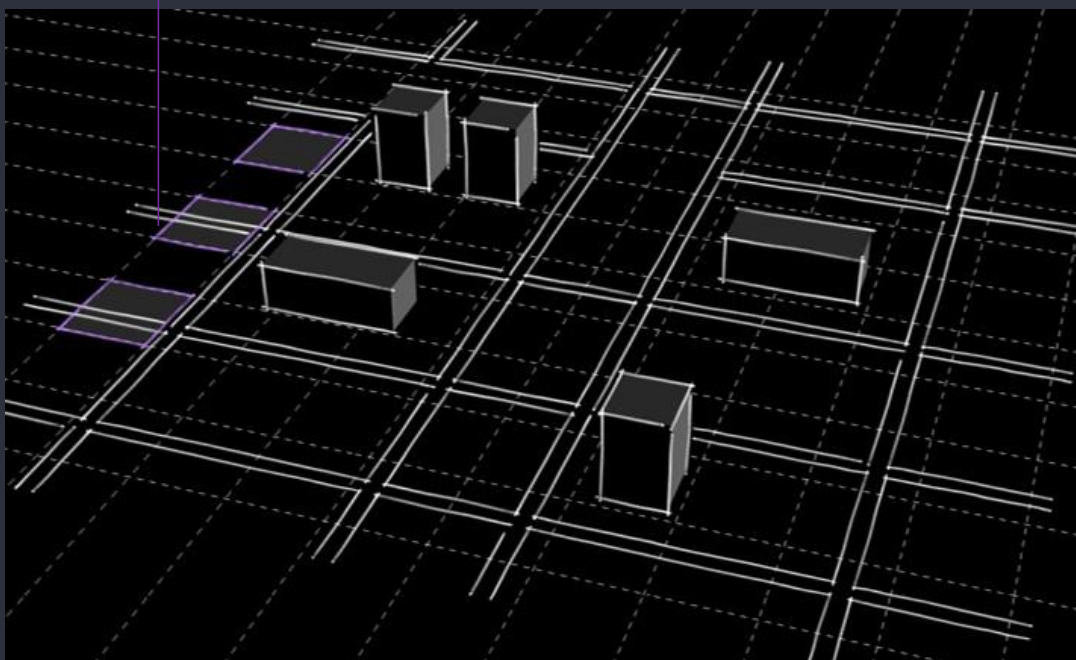


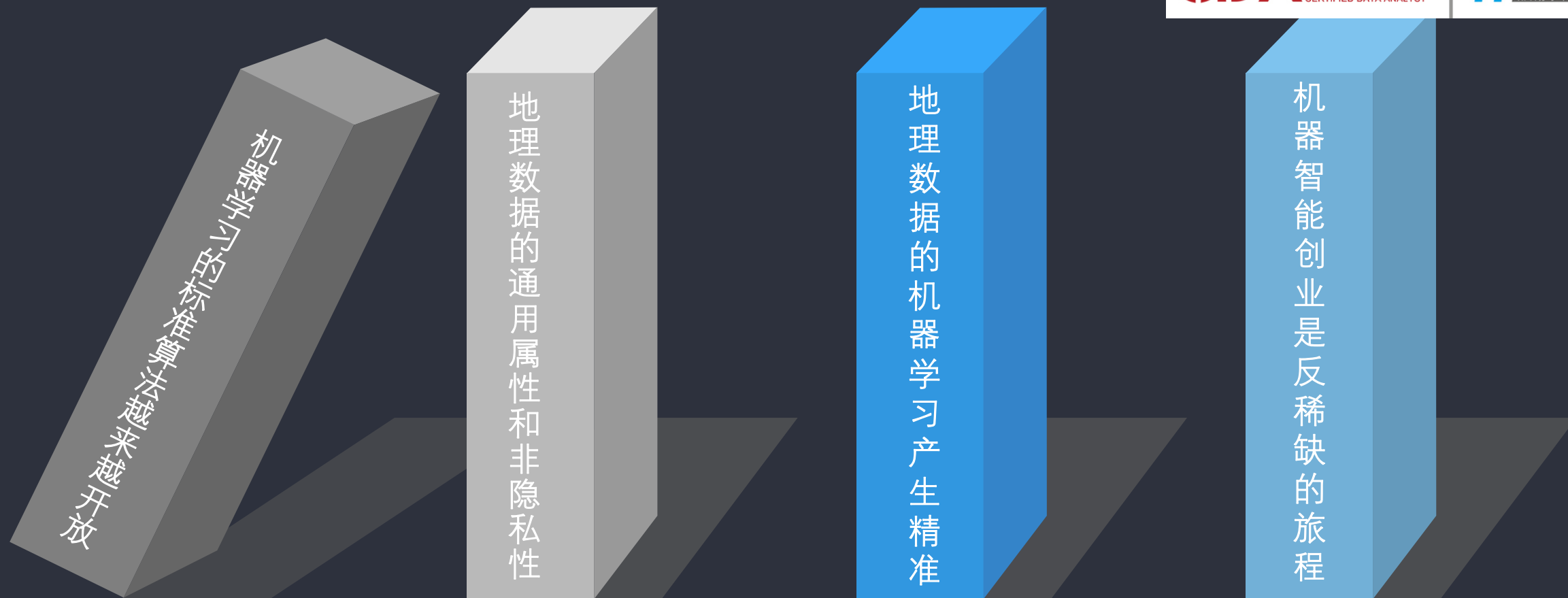


三大类、数百小类POI

房价与人口数据

刷卡消费数据





通用算法到行业特征

深度卷积、随机森林、
增强学习、转移学习

70%的事物有位置属性

通过地理维度建立数据的
关联，建立地理单元
标签化

静态和动态数据的极大升值

地理标签更精准的对人
进行画像，人的画像提
升地理标签的精准

地理智能成为非稀缺

好位置仍然是稀缺资源，
解读好位置的智能不再
稀缺。



CDA 数据分析师
www.cda.cn

THANKS

跨界互联 数聚未来

第四届中国数据分析师行业峰会
CHINA DATA ANALYST SUMMIT