

INNOVACIÓN URBANA DIGITAL

Ricardo Alvarez | Senseable City Lab | MIT

CIDEU | Webinar | Octubre 2020



MCMXVI

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

[yo] trabajo aquí





visualizing the lab's ongoing projects, July 2018

Leadership

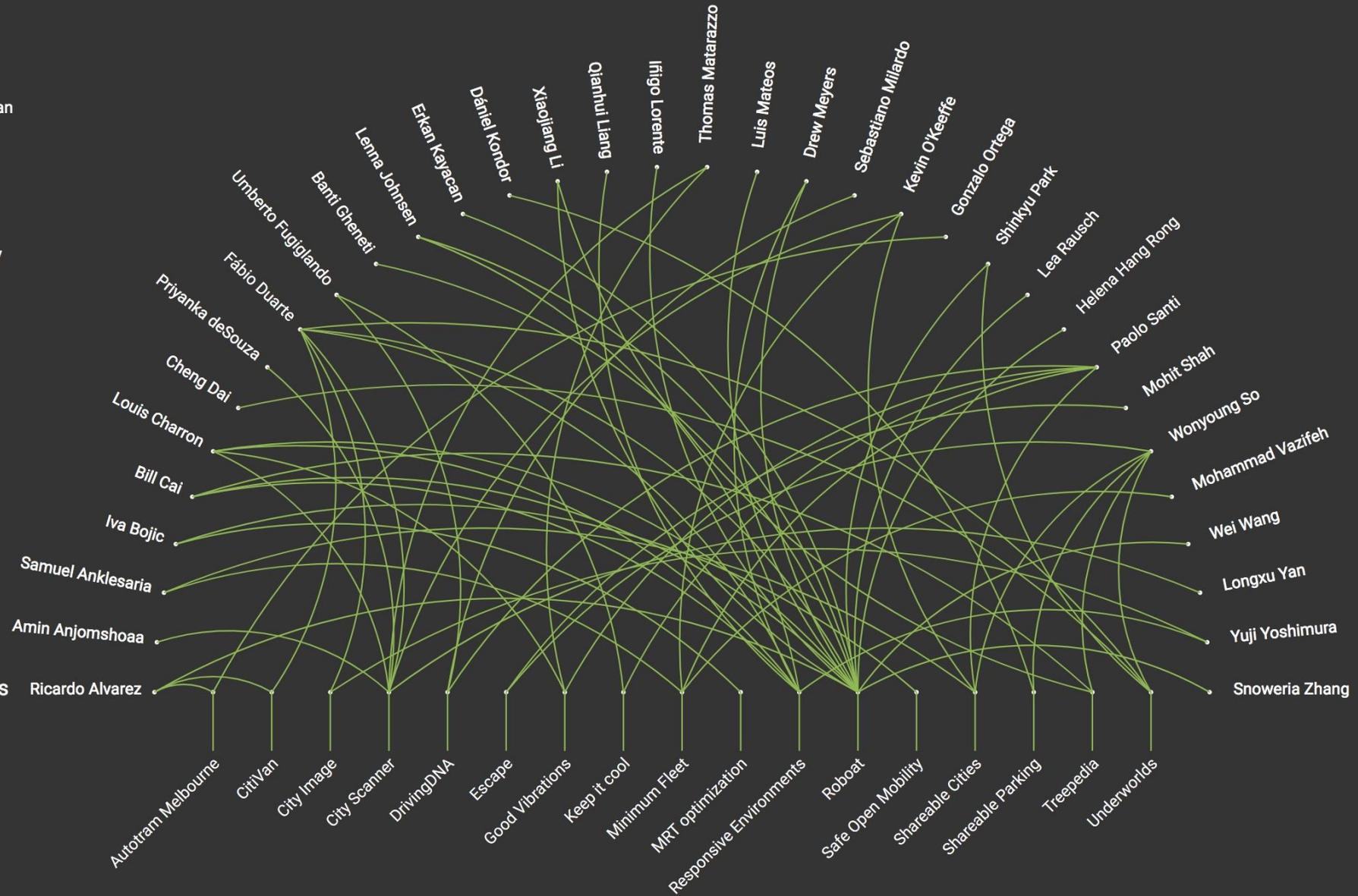
- Carlo Ratti
- Assaf Biderman
- Erin Schenck
- Rex Britter
- Fábio Duarte
- Paolo Santi
- Rachel Seavey

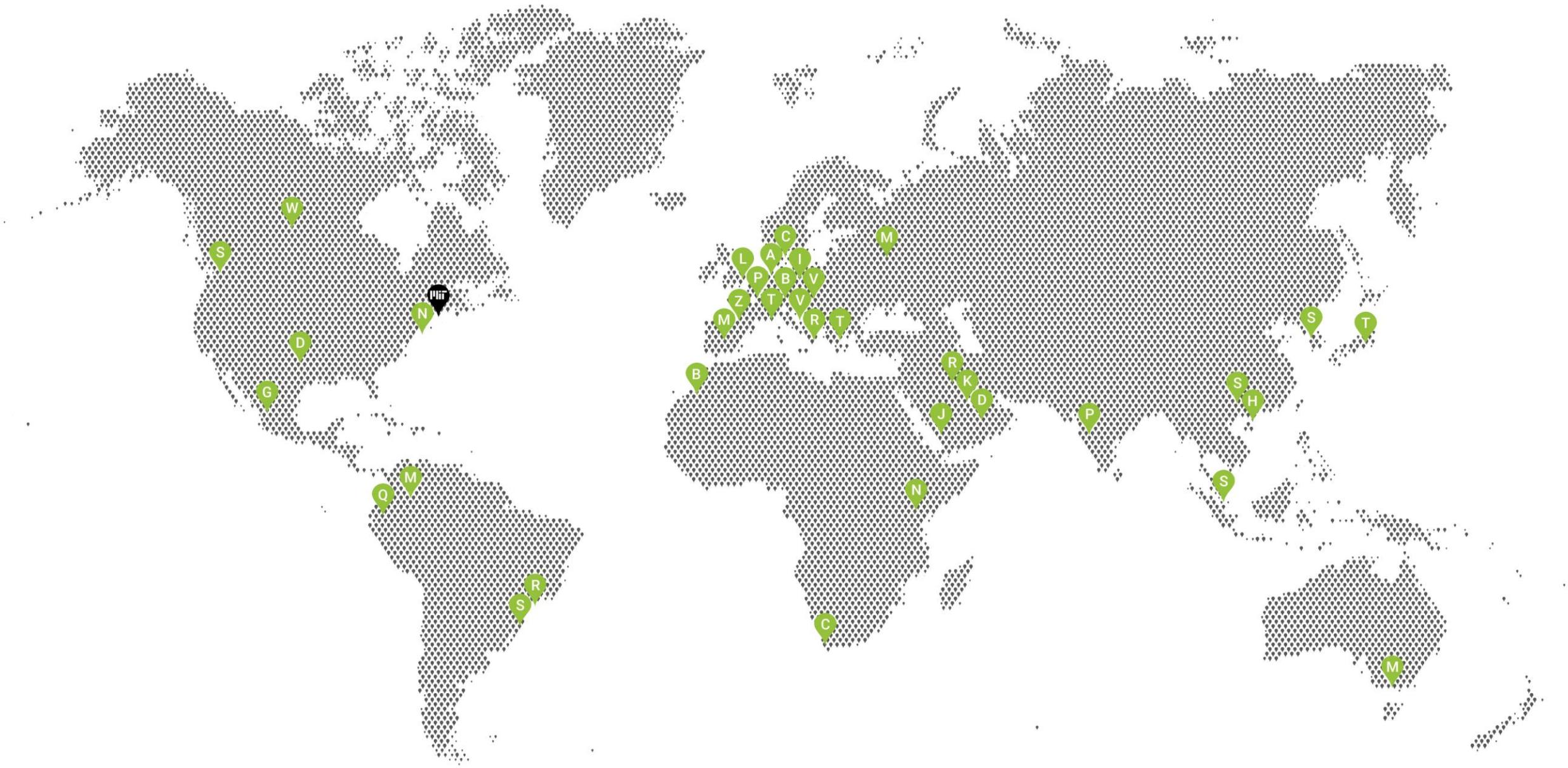
Researchers

- Ricardo Alvarez

Projects

- Autotram Melbourne
- CitiVan
- City Image
- City Scanner
- DrivingDNA
- Escape
- Good Vibrations
- Keep it cool
- Minimum Fleet
- MRT optimization
- Responsive Environments
- Roboat
- Safe Open Mobility
- Shareable Cities
- Shareable Parking
- Treepedia
- Underworlds

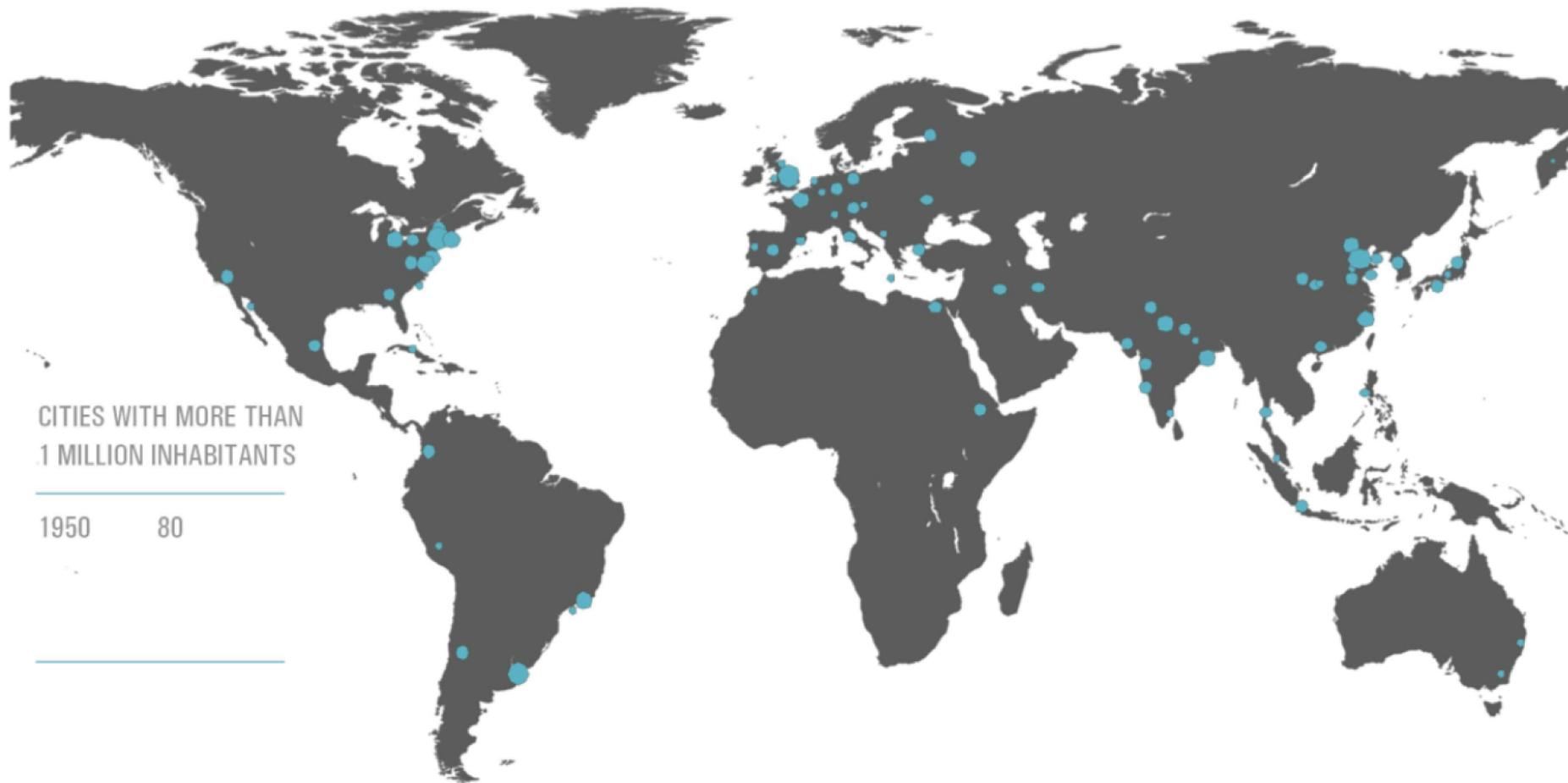




intro



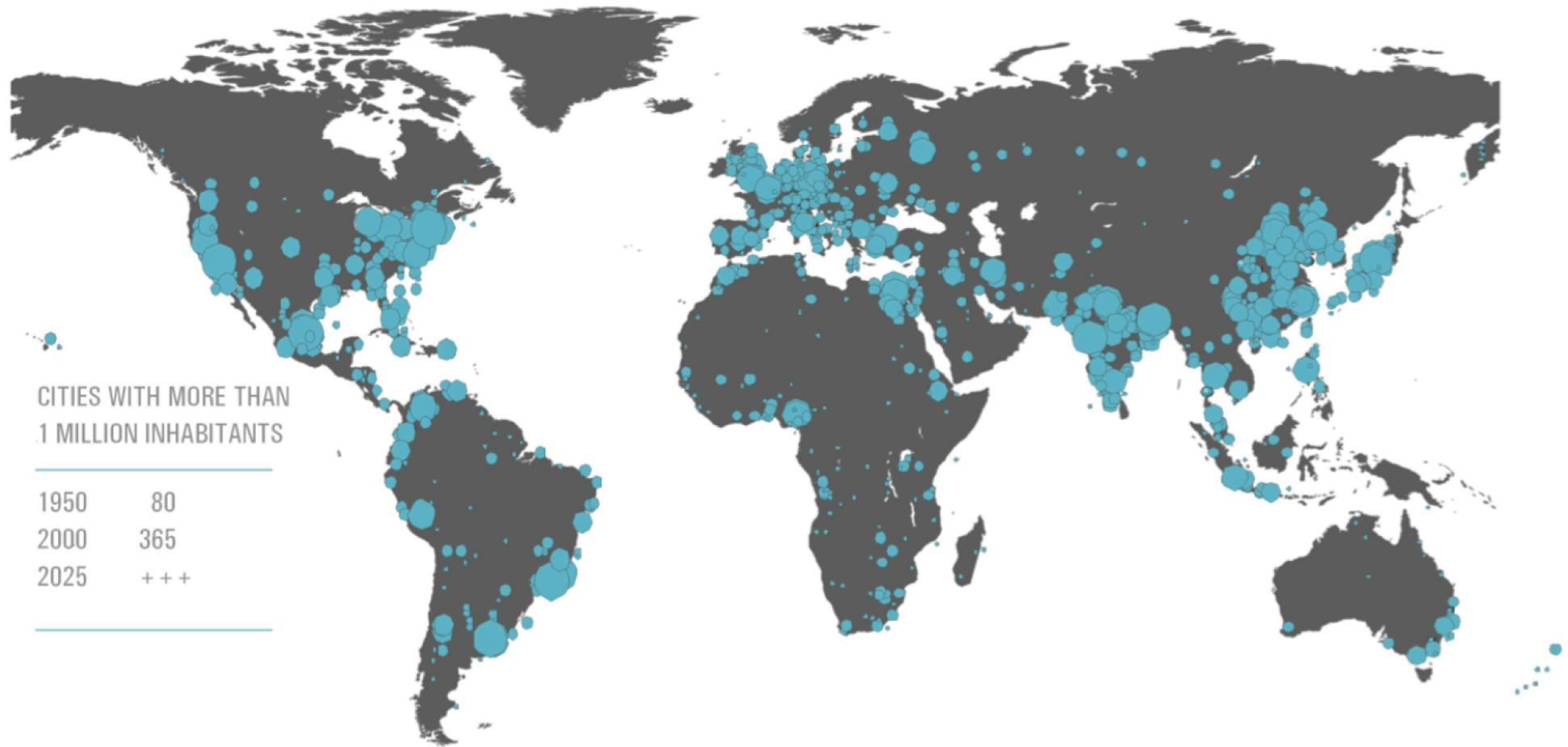
2 50 75 80



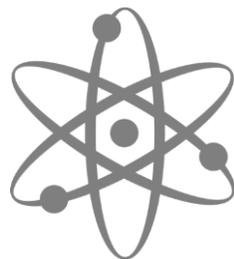
CITIES WITH MORE THAN
1 MILLION INHABITANTS

1950 80

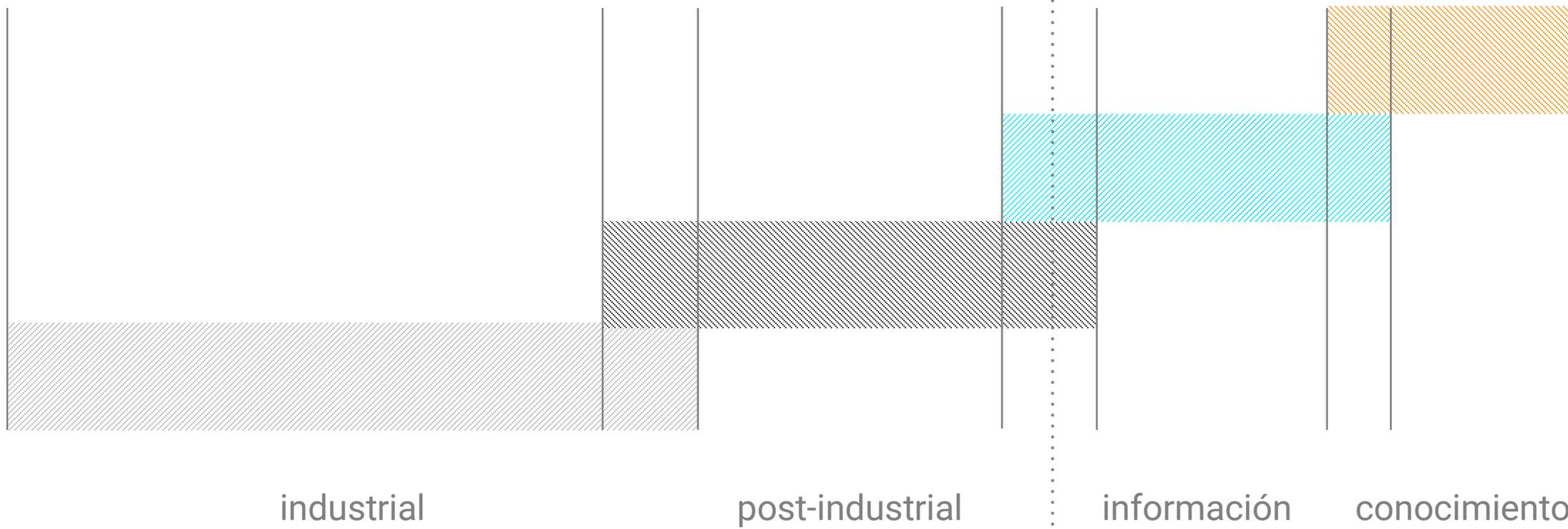
source: fundación metrópoli

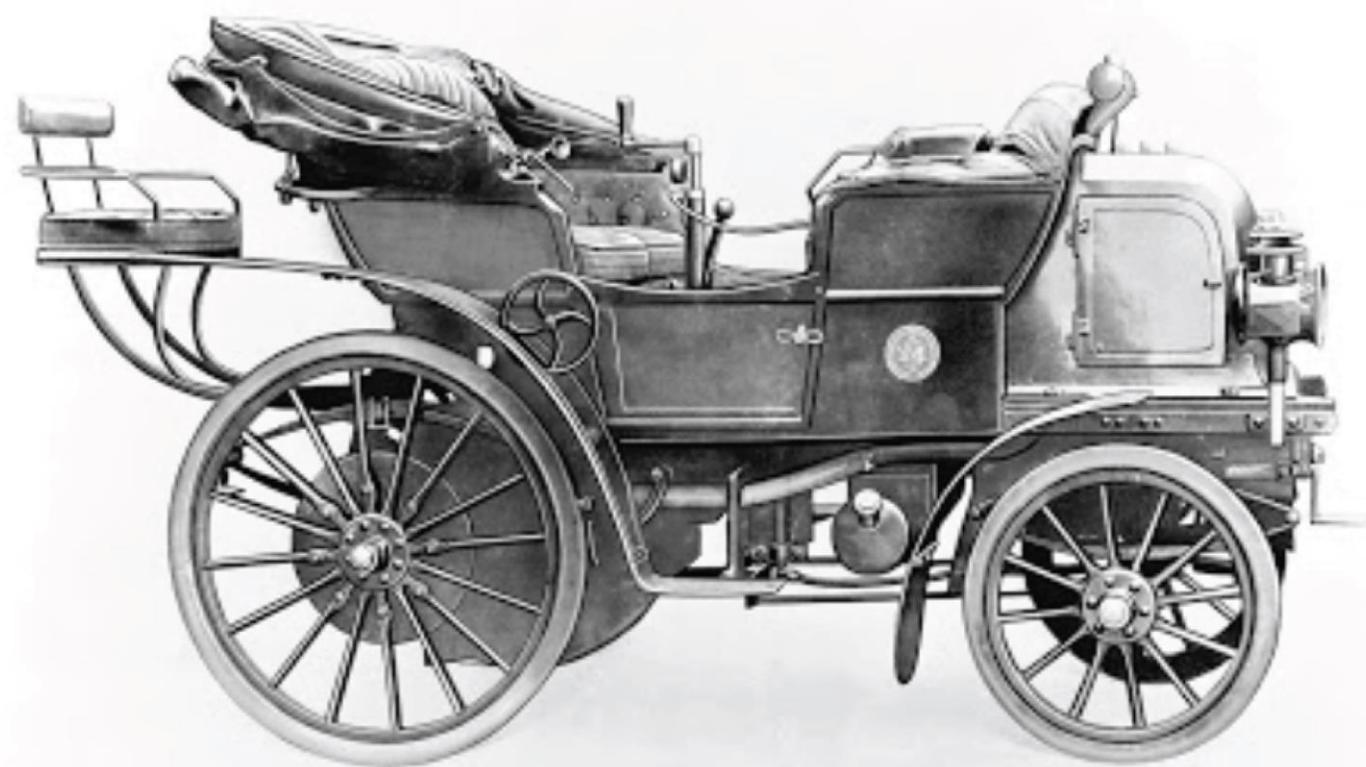


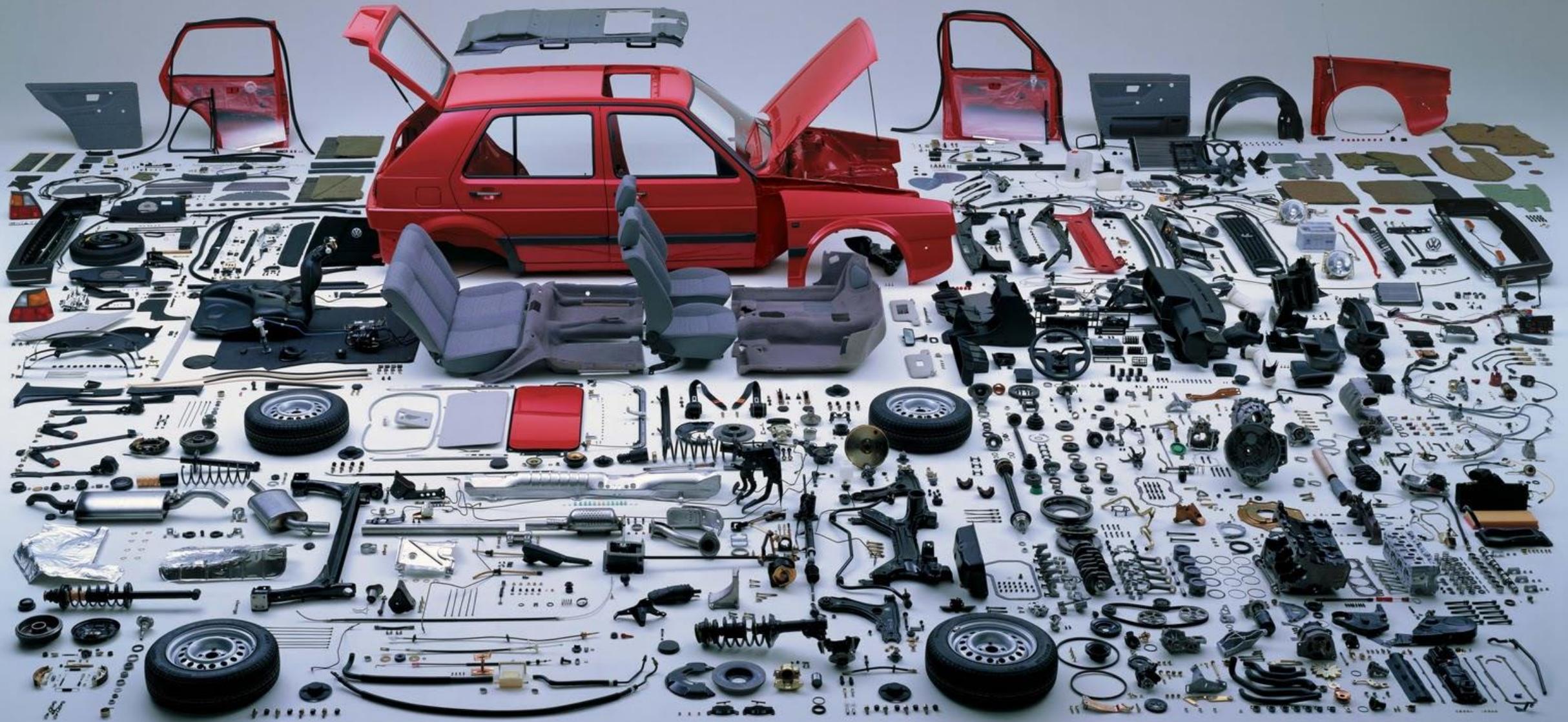
source: fundación metrópoli

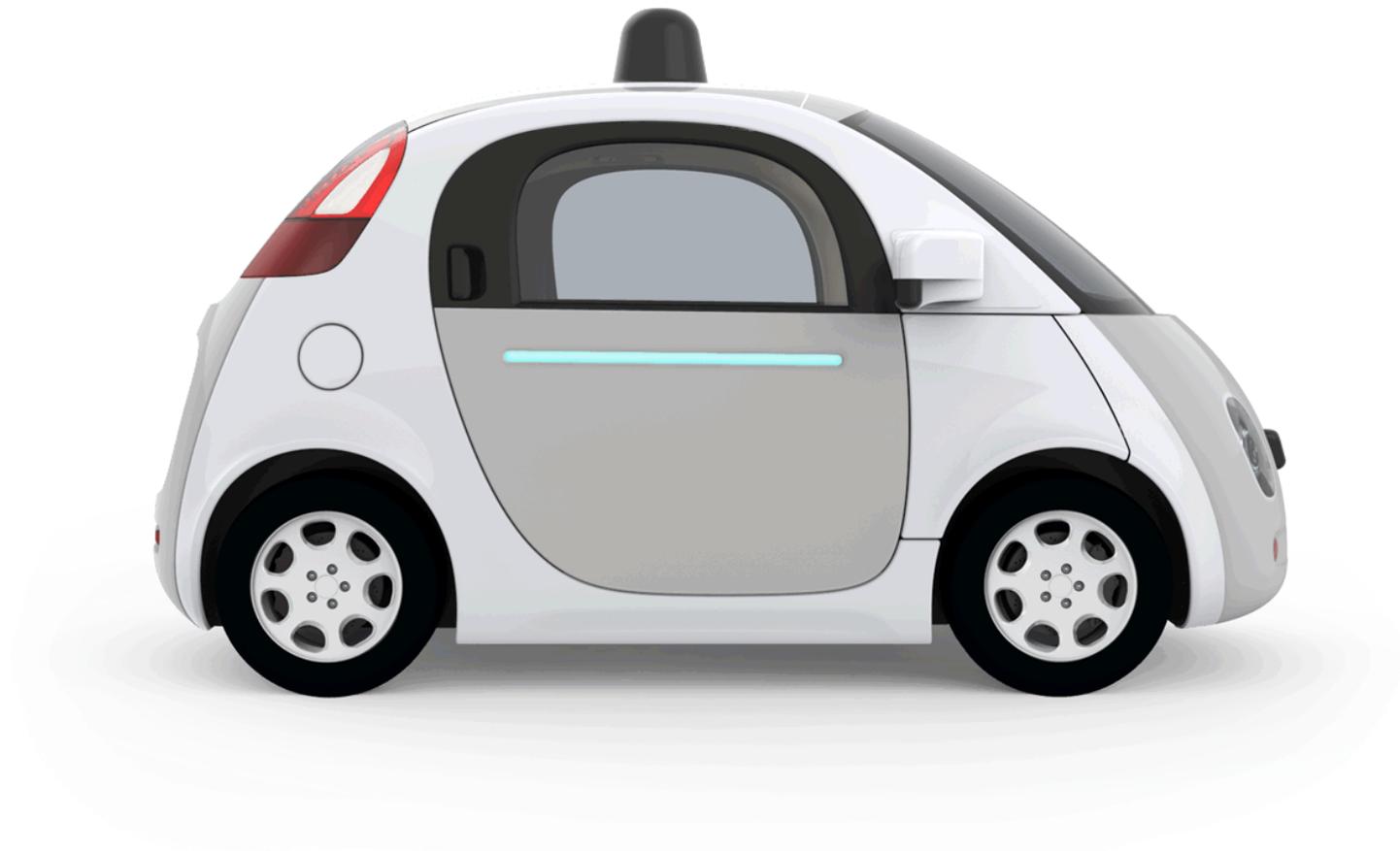


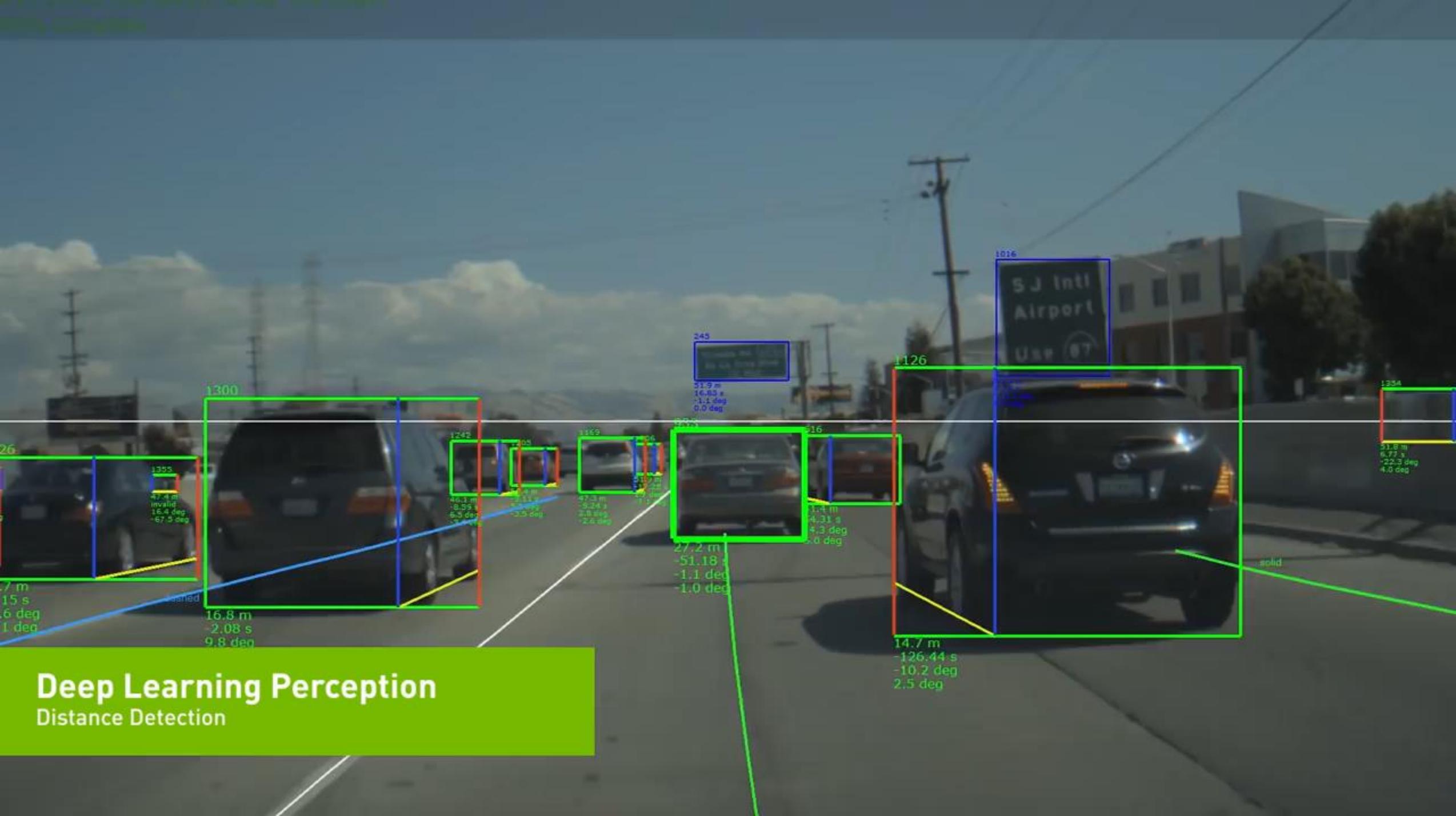
011010010
100101001
010110110
110101011
011001001











1326

17.7 m
15 s
16 deg
1 deg

1355
47.4 m
invalid
16.4 deg
-67.5 deg

1300

16.8 m
-2.08 s
9.8 deg

1242
48.1 m
-8.59 s
5.3 deg

1305
31.4 m
-3.11 s
-3.5 deg

1365
47.3 m
-8.24 s
2.8 deg
-2.6 deg

245

31.9 m
14.85 s
-1.1 deg
0.0 deg

1333

27.2 m
-51.18 s
-1.1 deg
-1.0 deg

1316

31.4 m
-4.31 s
4.3 deg
-0.0 deg

1126

14.7 m
-126.44 s
-10.2 deg
2.5 deg

1016

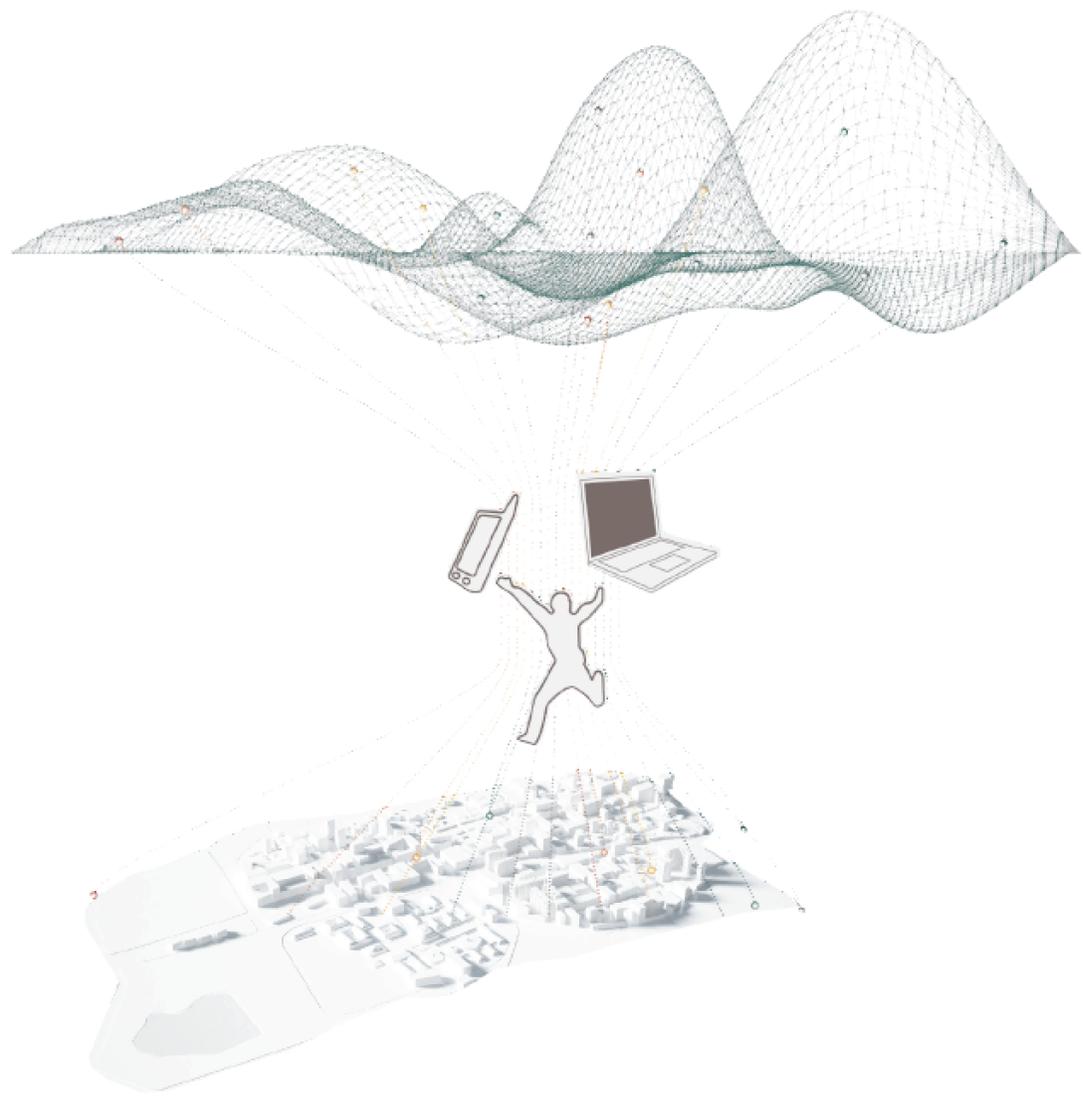
SJ Intl
Airport
Use 87

1334

31.8 m
6.77 s
-22.3 deg
4.0 deg

solid

Deep Learning Perception
Distance Detection





1992 // **.001** GBPS

2002 // **100** GBPS

2007 // **2,000** GBPS

2016 // **26,600** GBPS



2021

3.3ZBPS

80%

de los datos almacenados en el mundo son privados, el reto es encontrar formas para **utilizarlos por el bien público.**

descubrir



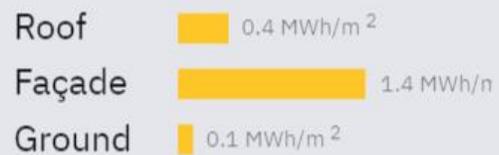
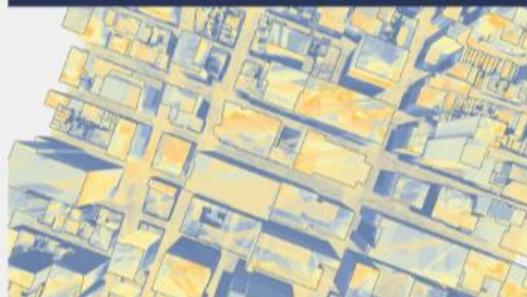
solar cities

How does urban morphology
affect the solar potential of
cities?



New York

1.94 MWh/m²



Singapore

1.84 MWh/m²



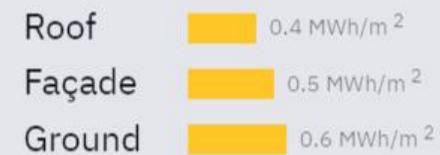
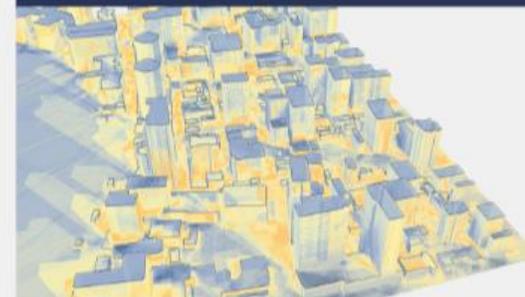
Mandalay

1.54 MWh/m²



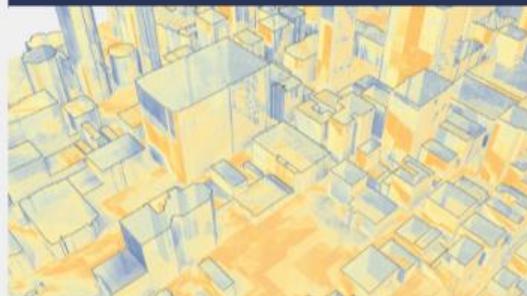
Honolulu

1.50 MWh/m²



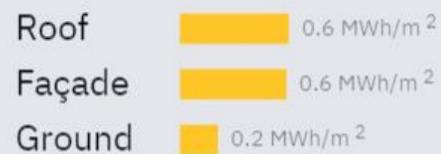
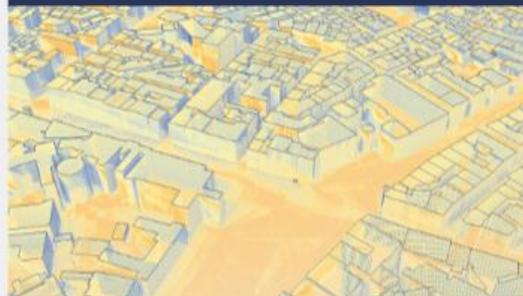
L.A.

1.49 MWh/m²



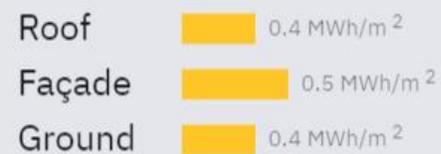
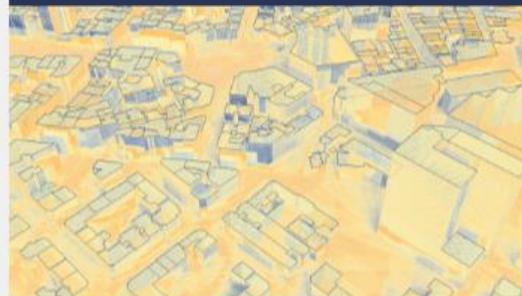
Athens

1.44 MWh/m²



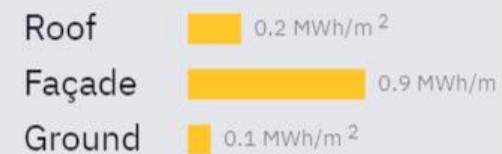
Lisbon

1.30 MWh/m²



Toronto

1.30 MWh/m²





treepedia

100 Massachusetts Ave
Boston, Massachusetts

Google, Inc.

Street View - Aug 2017

Roc & Board

MUJI

MUJI
無印良品

Massachusetts



Google



hubcab // nyc

8N85

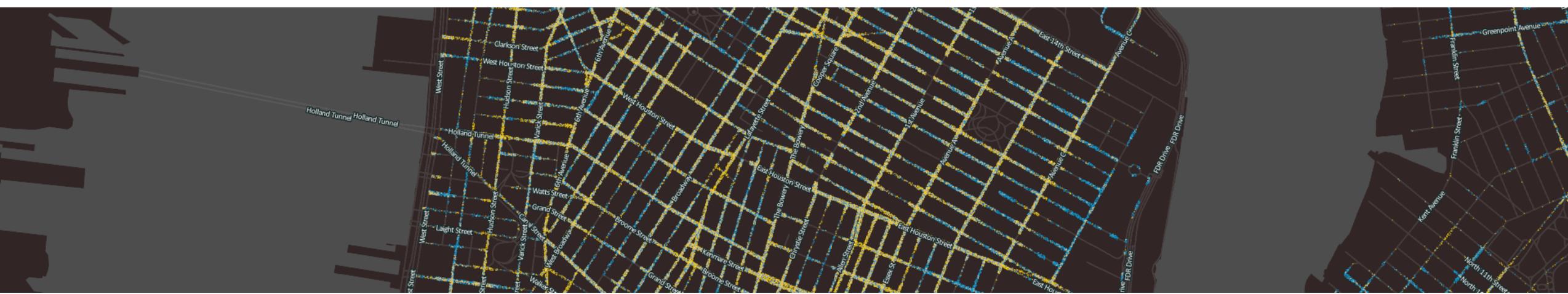
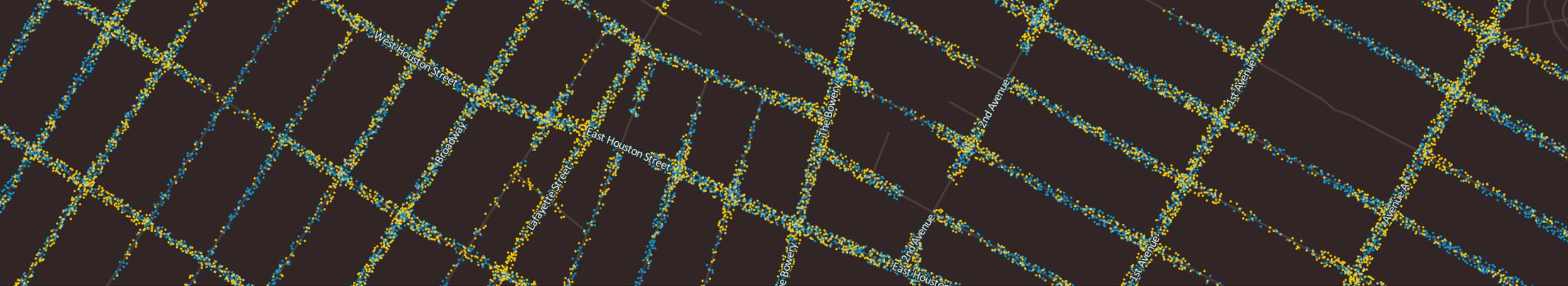
8N85

8P51

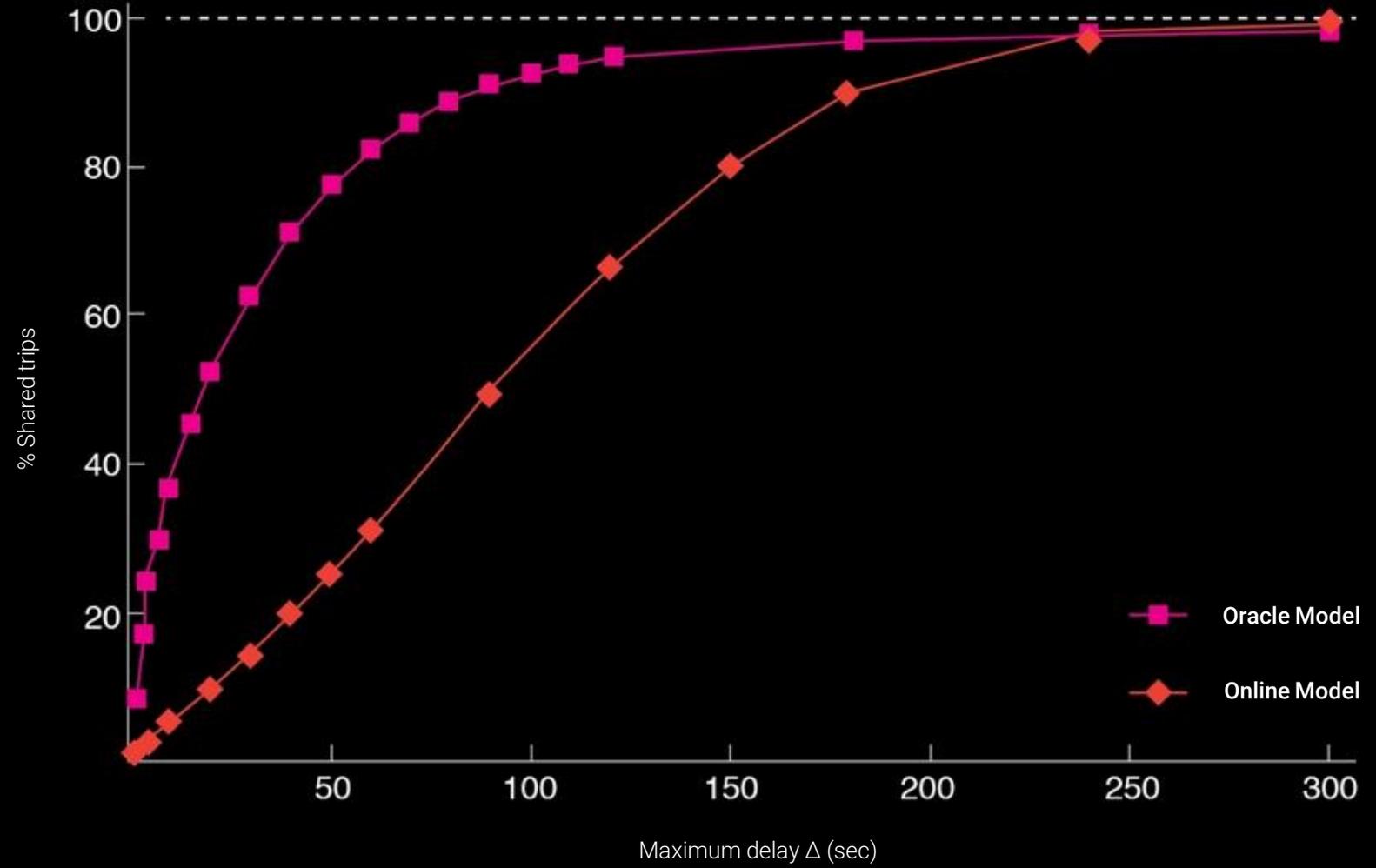
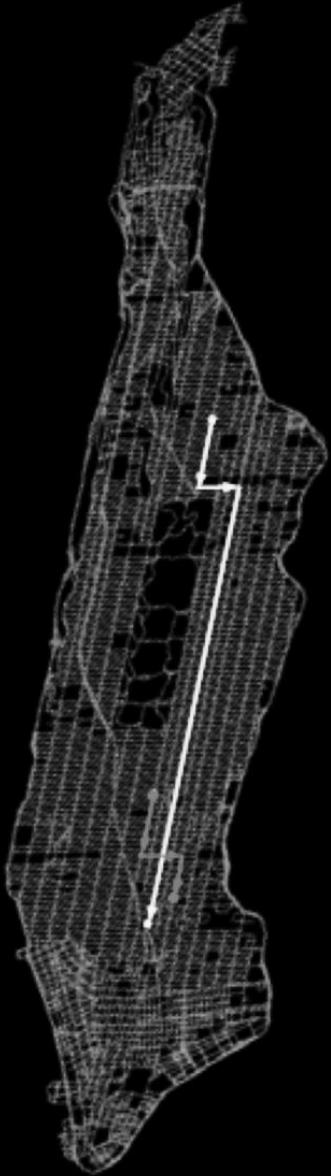
4N73

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nature

THE INTERNATIONAL WEEKLY JOURNAL OF SCIENCE



Network analysis
of journeys reveals
optimum size for New
York taxi fleet **PAGE 534**

DRIVING FORCE

CLINICAL ONCOLOGY

MICROBIOME MATTERS

*Harnessing gut bacteria
to aid cancer therapies*

PAGE 482

CLIMATE CHANGE

ECONOMICS OF EMISSION CUTS

*UN goal of 1.5 °C warming
offers potential savings*

PAGES 498 & 549

EVOLUTION

HEAD START FOR HUMANS

*How ecological factors
increased human brain size*

PAGES 496 & 554

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singapore calling



Socio-economic Status
Lower 90-100%

Poorer Richer

Communication Segregation Index (CSI) **0.706**

0.0 0.5 1.0
Less Seg. Baseline More Seg.

**0.5 is the baseline value of social segregation. If the value is under 0.5, an individual is less segregated and if it is over 0.5 an individual is more segregated.*



Poorest 10%
CSI: 0.541



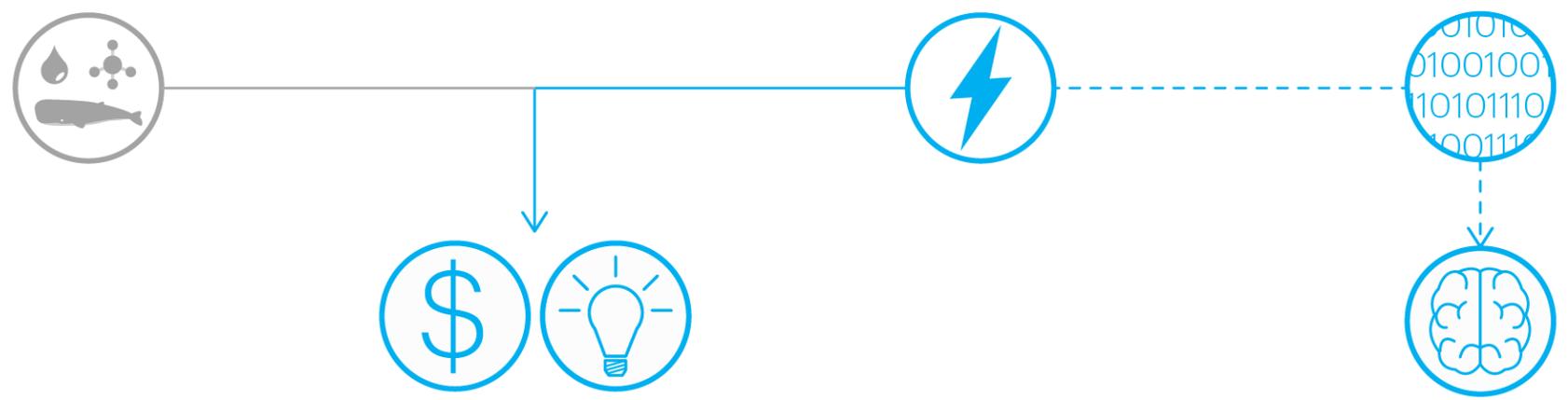
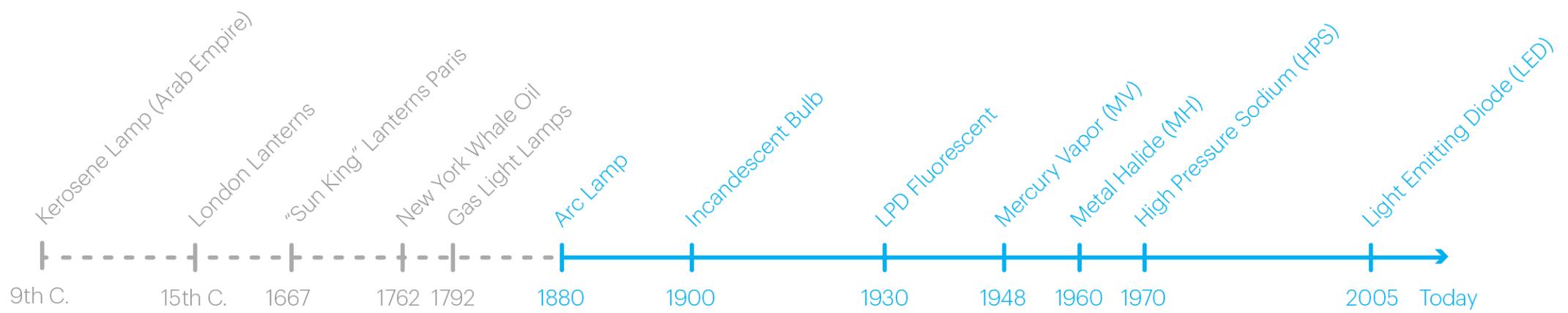
Richest 10%
CSI: 0.706

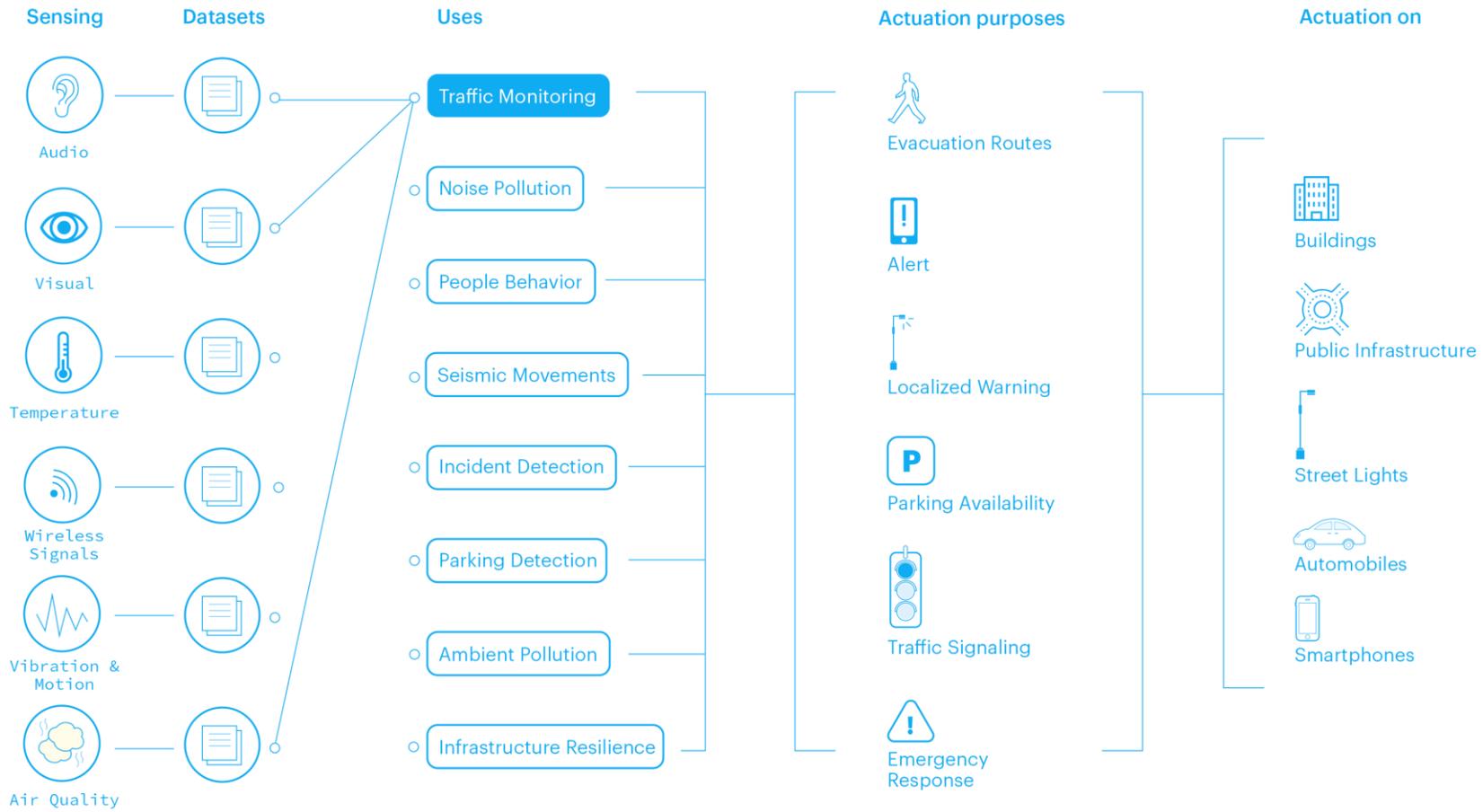
crear

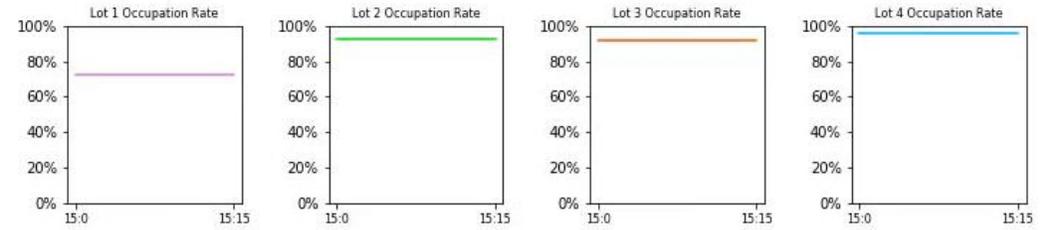
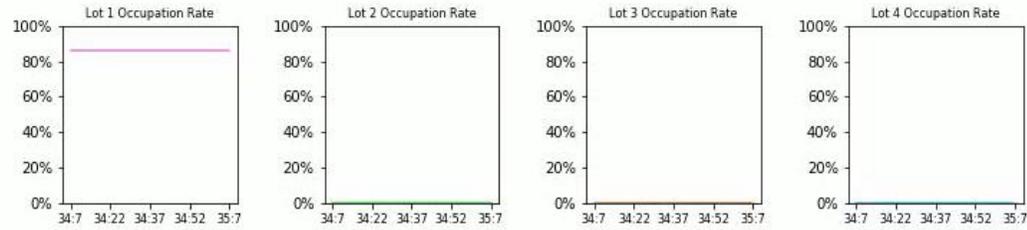


sensing lights

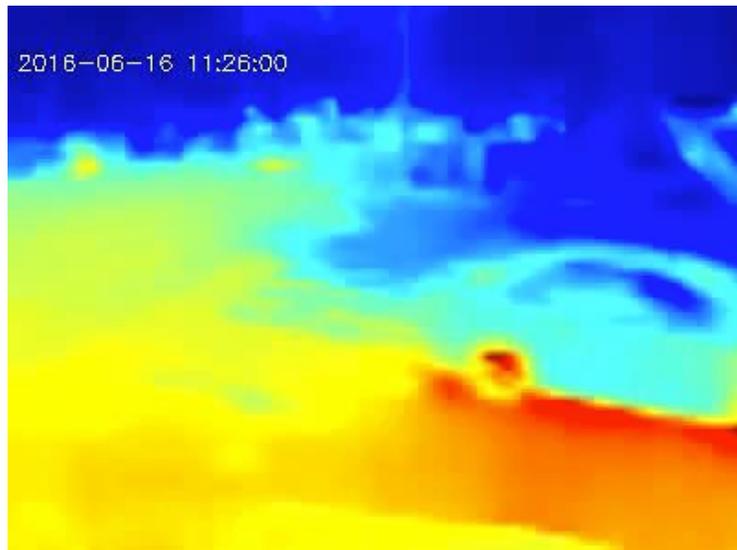








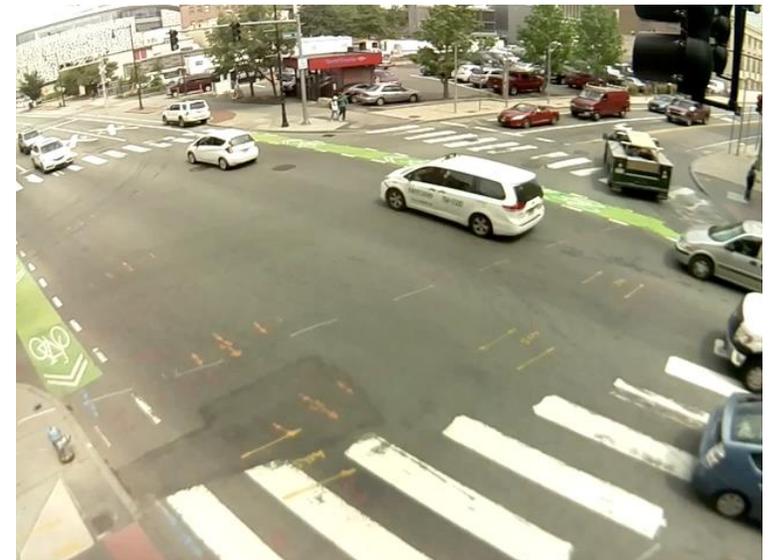
Thermal sensor

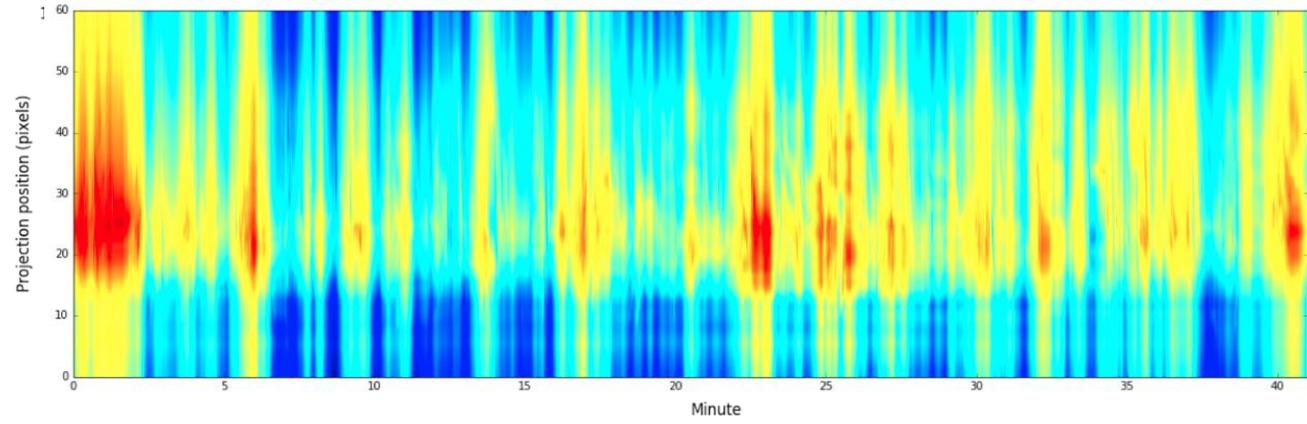
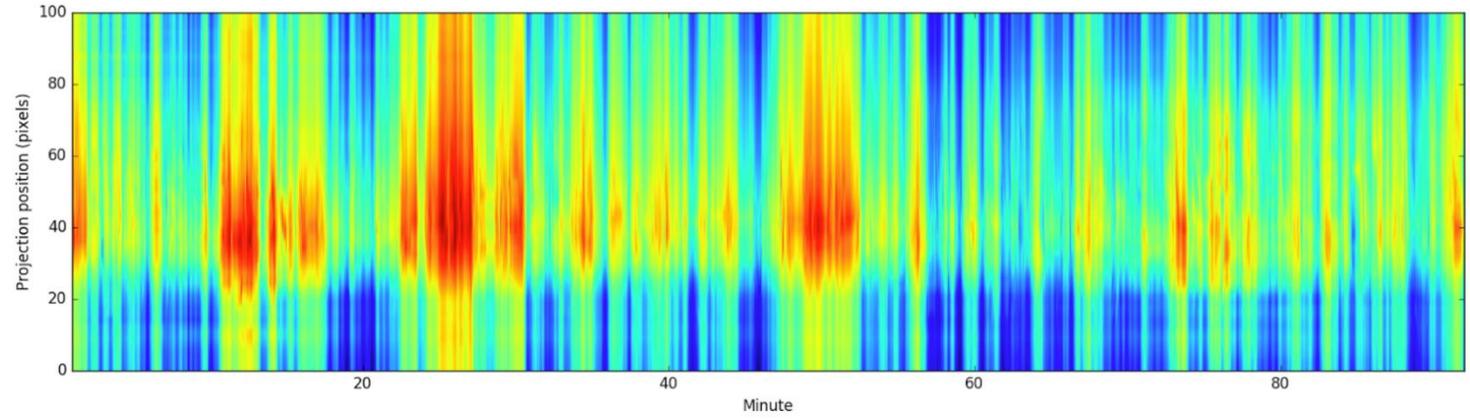


Camera 1



Camera 2



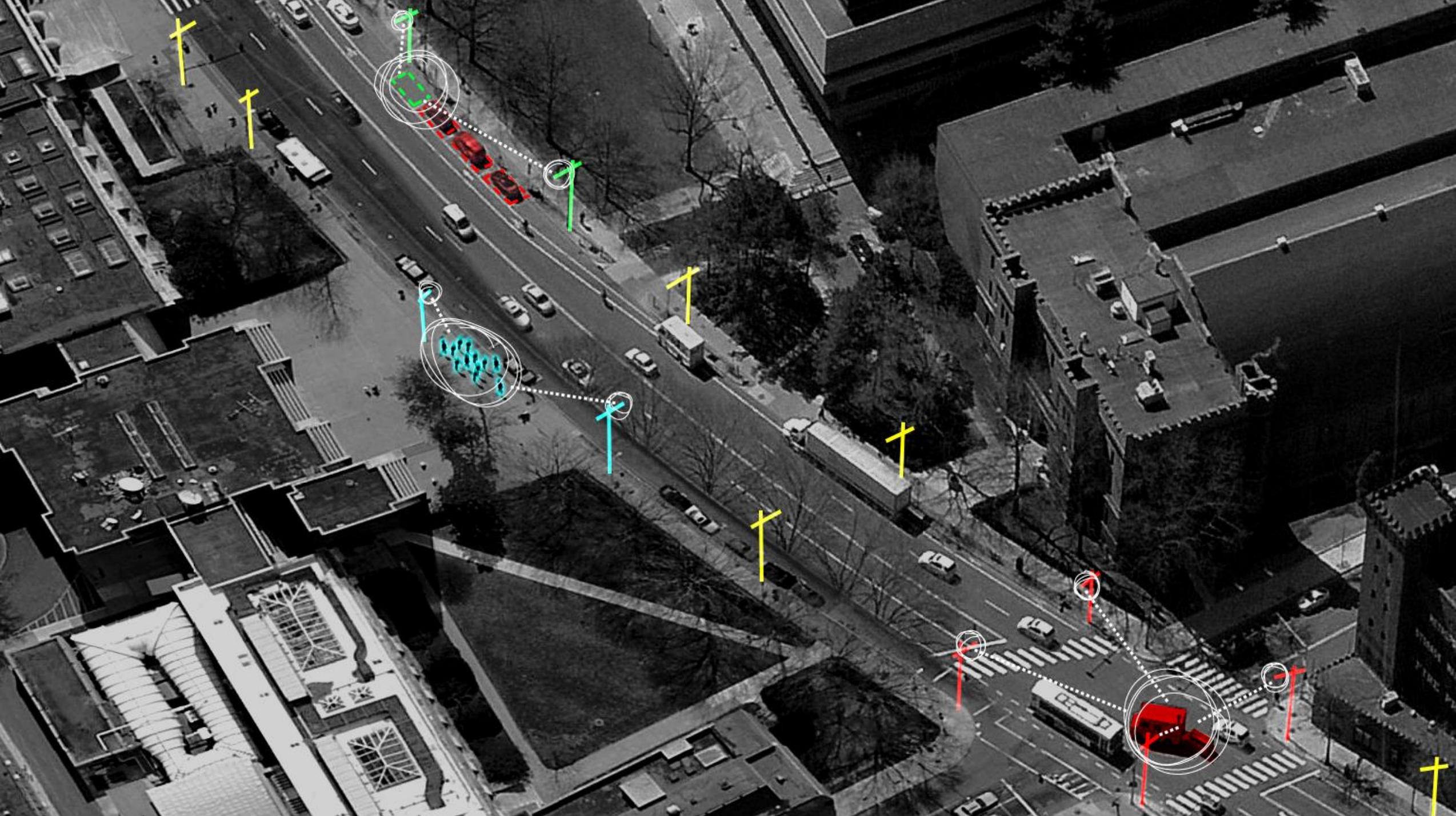


8:00 am normal cycle

Loading the Model...

8:00 am optimized cycle

Loading the Model...





underworlds









roboat

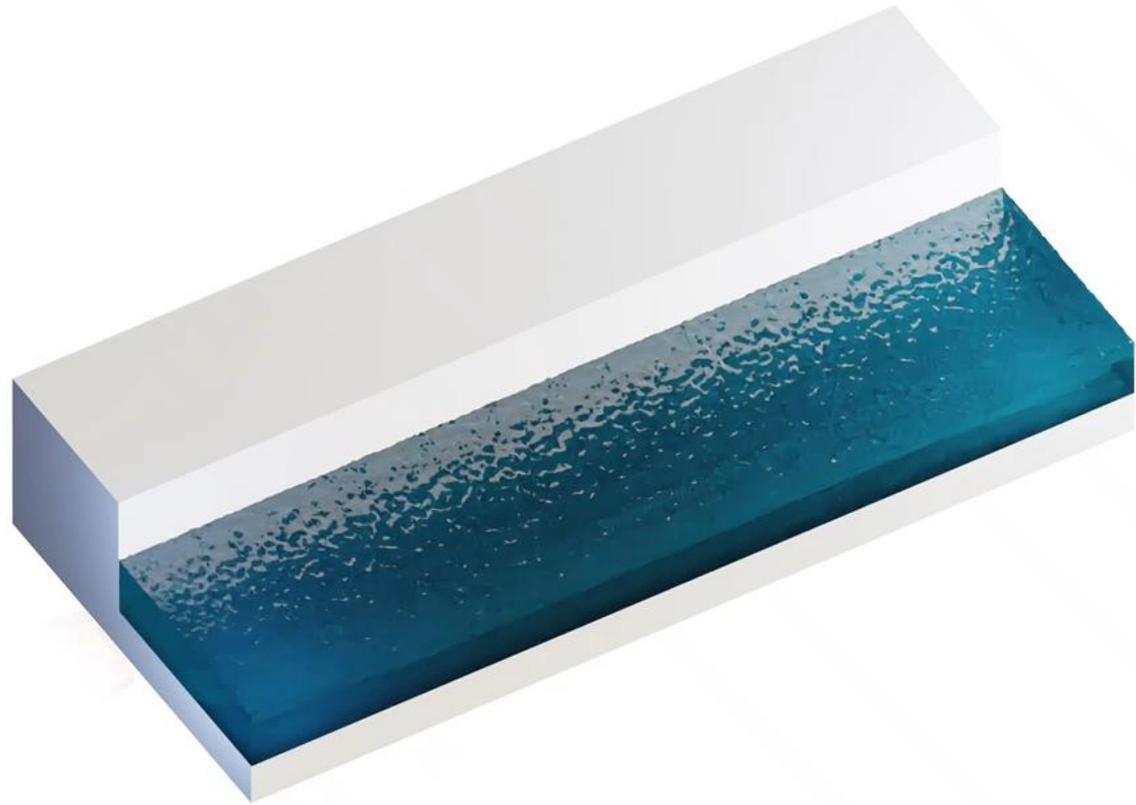






DeliXL

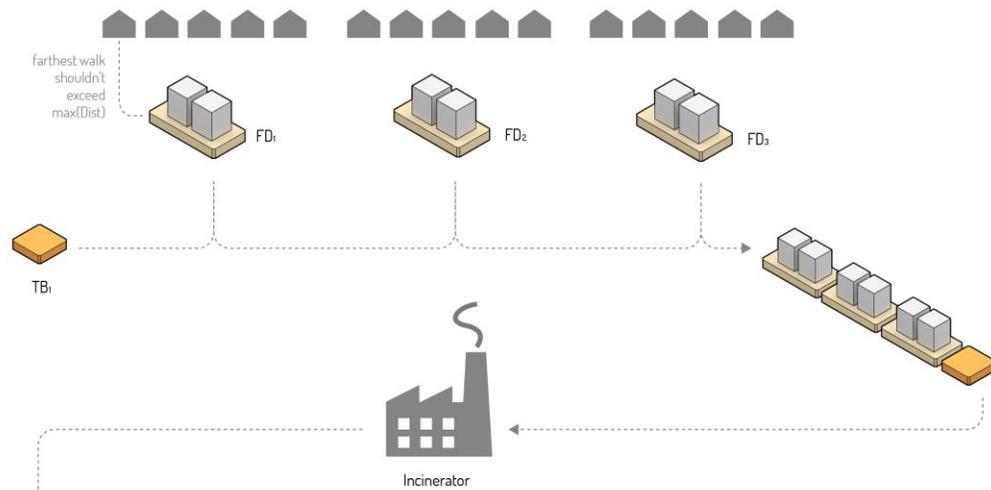
Beleidslijn
Tel: 020-5000000
www.deli.nl



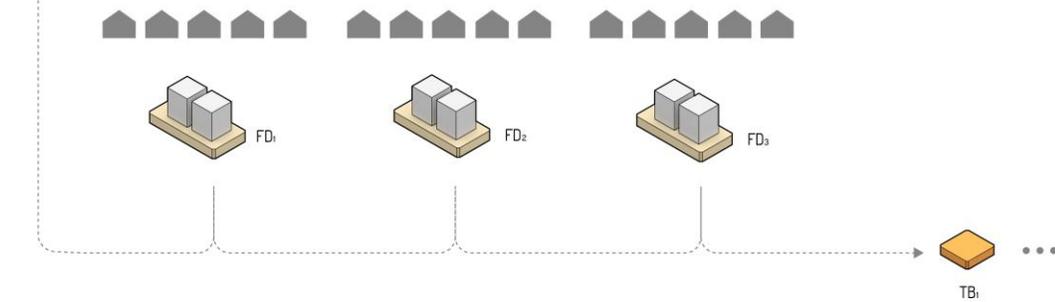




Collection Zone 1



Collection Zone 2



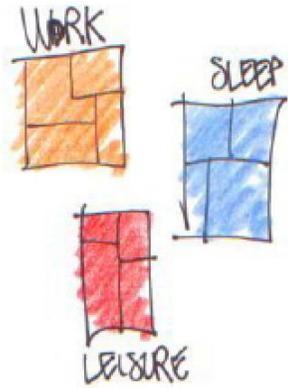


roboat.org

integrar

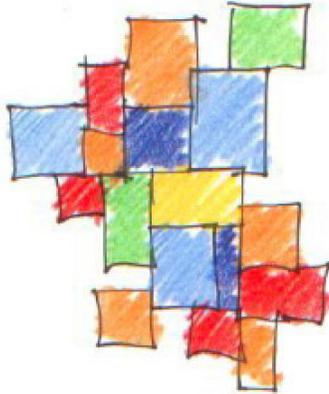
1931

CHARTER D'ATHÈNES



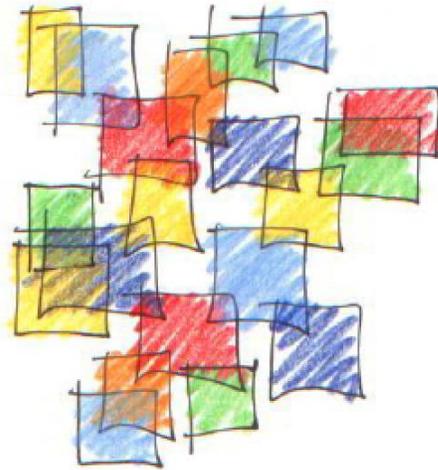
1960

JANE JACOBS

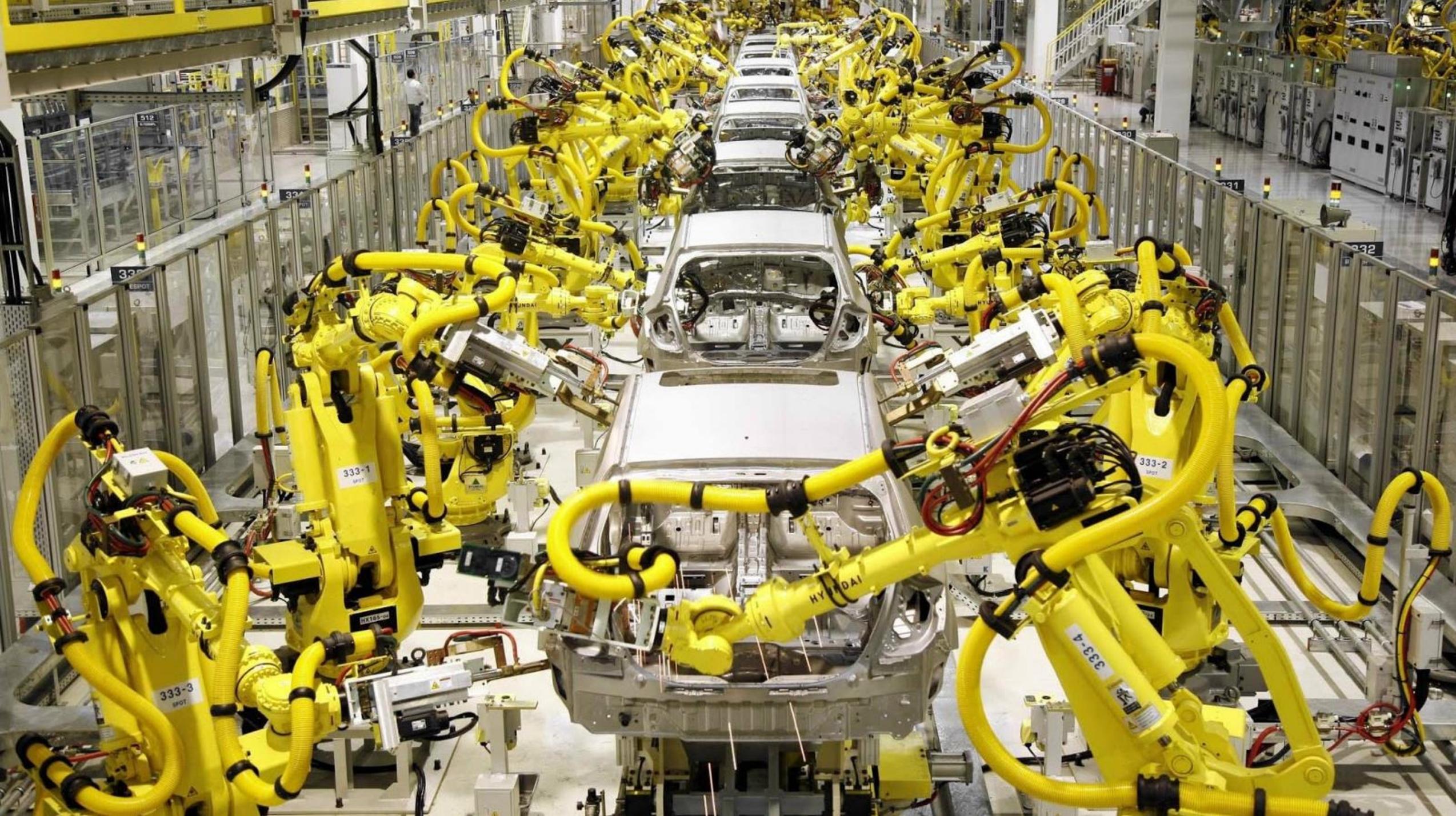


2000

DIGITAL REVOLUTION

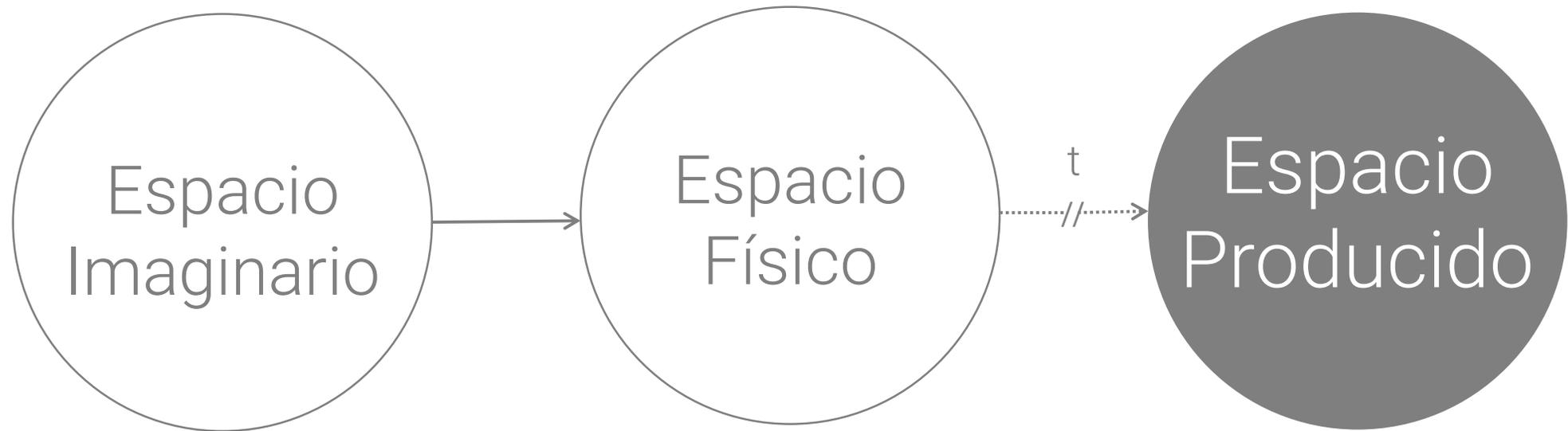






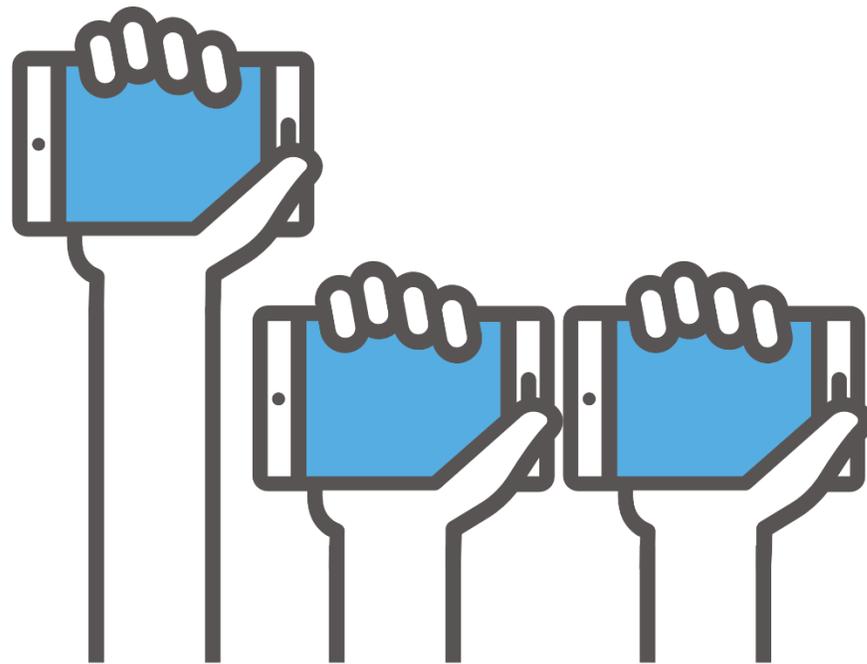






Lefebvre // La production de l'espace





“En nuestro tiempo **technē** se ha convertido en **politeia** – Nuestros instrumentos son instituciones en progreso.”

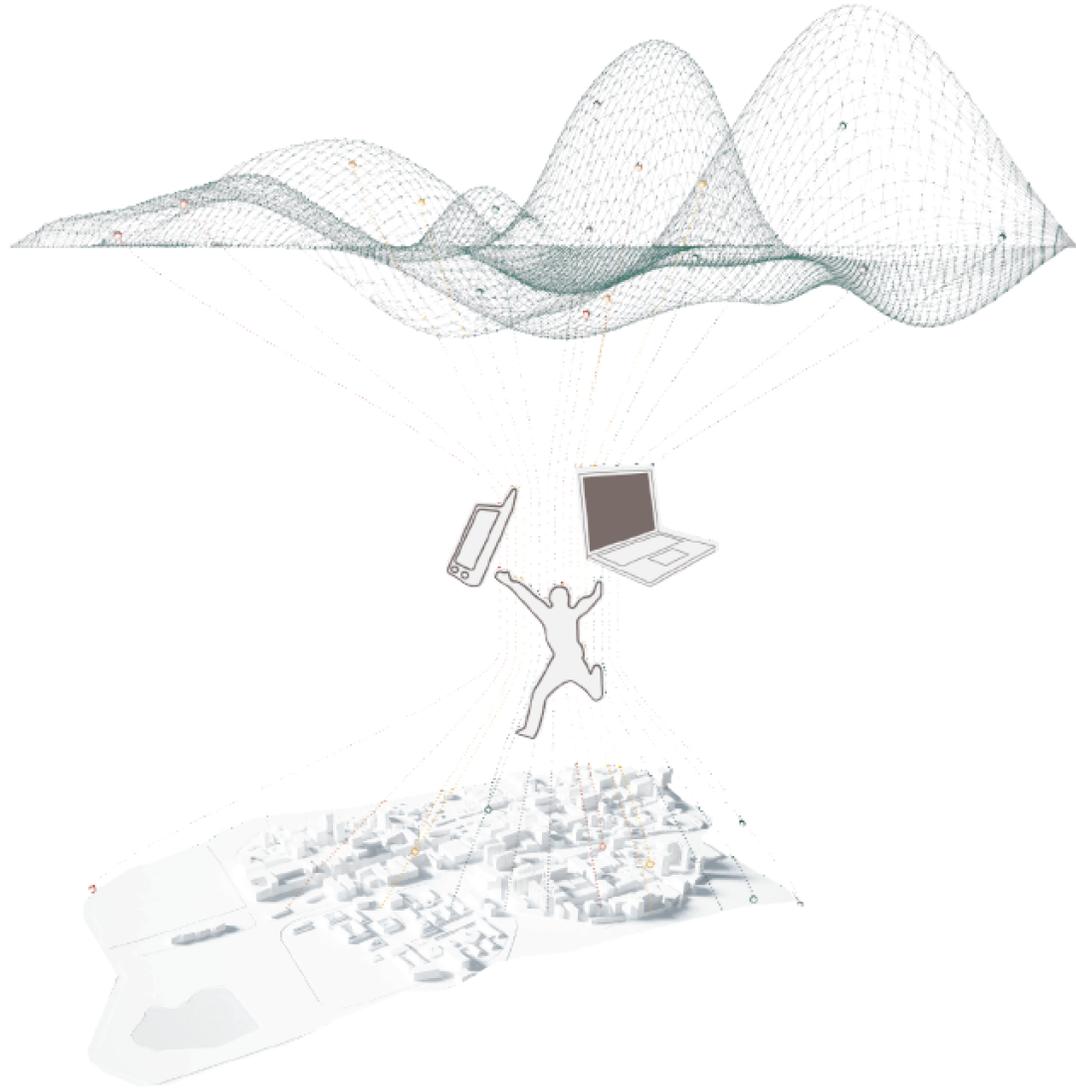
Langdon Winner



**Centro de
Tecnología y
Futuros
Urbanos para
América Latina**



senseable
city lab.



Gracias!

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jraf@mit.edu