

graphic Science - ture II

Spatial Data

ribas-Bel

t e r d a y "

a revolution

ience to make sense of it all

d a y

quick) refresher
of (spatial) data

les

ld) spatial data

1d) spatial data

stics (+ and -)

es of (spatial) data

Uses of (spatial) data

Location

Feature categories (polygons, points,

Attributes

Related:

Sensors"

Businesses/businesses going digital

Open Data

l s a s s e n s o r s

spread adoption of sensors

.)

an life is subject to leave a
ted, stored and analyzed
data creators (sensors, *Goodchild*,

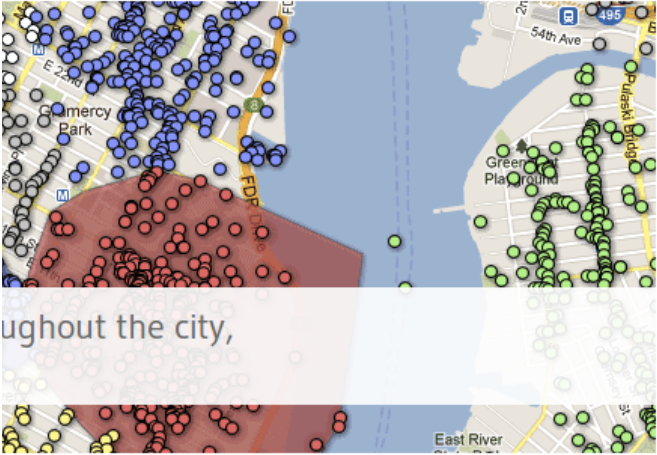
-> Most of it (80%?) has some

L i v e h o o d s

Research

Press

Contact



ughout the city,

Using Machine-Learning to Study Cities

Our research hypothesis is that the character of an urban area is defined not just by the the types of places found there, but also by the people that make it part of their daily life. To explore this idea, we use data from approximately 18 million check-ins collected from the location-based social network foursquare, and apply clustering algorithms to discover the different areas of the city.

> MORE

PIT

> Pittsburgh

> More Maps

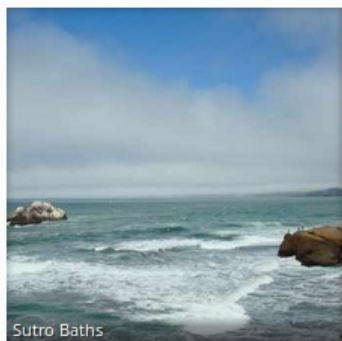
m o v i n g o n l i n e

ts of bussiness activities have
decades

nge in the final product or
tal data is "available" about

less activities have been created
s ("internet natives")
esearchers better understand

Walkscore



Sutro Baths



Presidio San Francisco

San Francisco is the 2nd most walkable large city in the US with 805,235 residents.

San Francisco has excellent public transportation and is very bikeable.

Find apartments in San Francisco's most walkable neighborhoods: [Chinatown](#), [Financial District](#) and [Downtown](#).

San Francisco Homes for Sale

\$3,750 and the average home price is \$1,099,999. [?](#)

data for open governments

(part of) their internal data in
[bolt, 2010](#)):

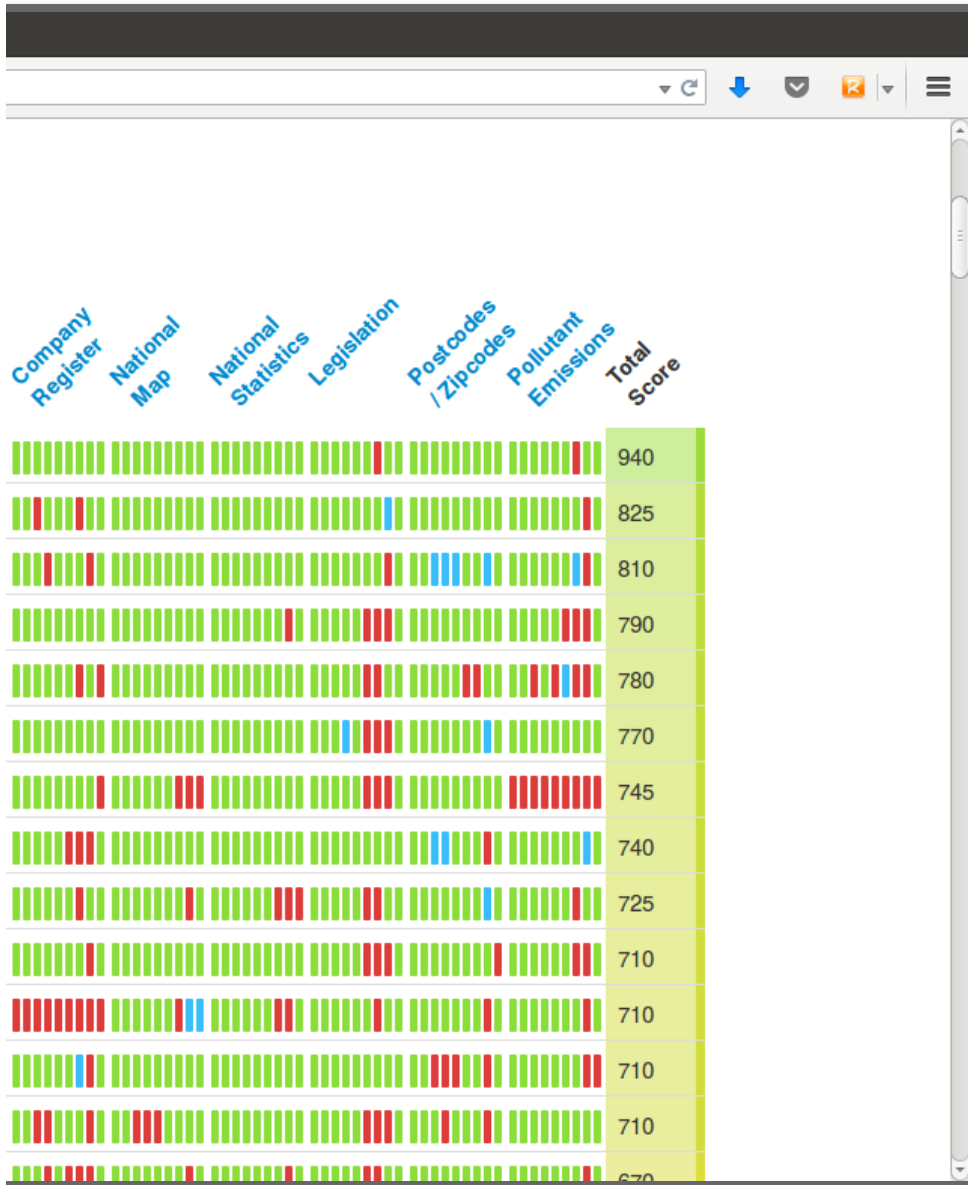
and accountability

social value

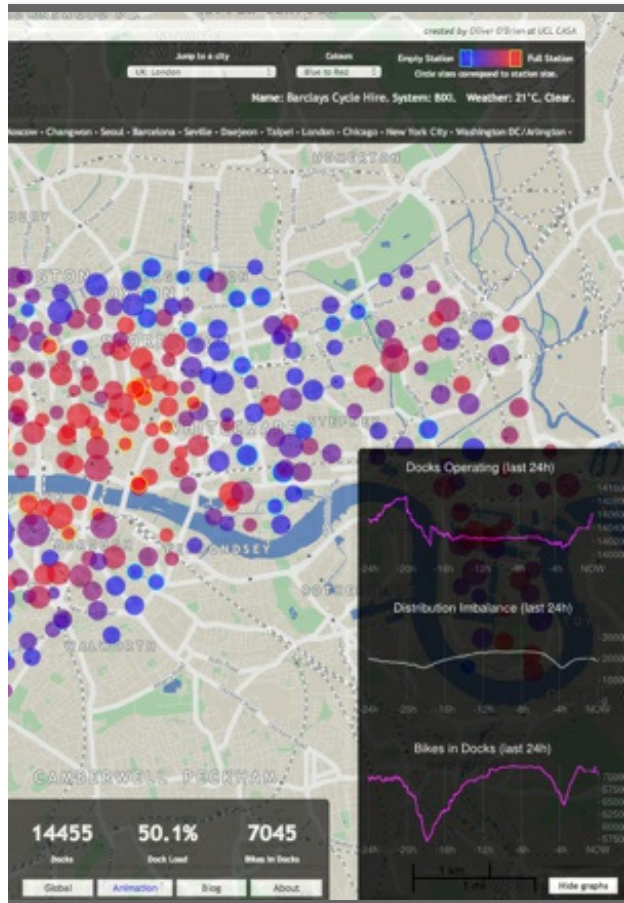
improvement

industries and jobs

en Data Index 2014



keShare Map



ture

is Quiz

the origin of the following sources

lets

the transaction values

grant listing

indices

the service station status

uiz - Answers

tom-up

on values --> Open Government

g --> Digital businesses

Traditional (not accidental!)

ation status --> Open

l l e n g e s

i a s

ban researchers meets some
ivity, accuracy...)
ew data sources will not always

to have extra care and put more
s they can reach from analyses

un in favour of researchers, but
granted

barriers to access

ole

ure makes them not be *directly*

lls is required to tap into their

standing of the internet, APIs,

"go beyond Word and Excel")

Methods

exactly the same as that of more

3:

ons Vs. Points

uency): Decadal Vs. Real-time

" with techniques employed

Geography.

sight as possible from these new

ques from other disciplines, or

le learning (but also others like

- Visualization

es

phy, but more emphasis should

re the data) and *communicate*

)

on

Machine learning

re, blended with statistics
rn recognition

nputer some true relationships
the model to infer others
lable (e.g. [Google flu trends](#))
speak"... and the machine pick
[oods](#))

Is it a New World?

both worlds
entary

ecture 1 by Dani Arribas-Bel is
ons Attribution-
International License.