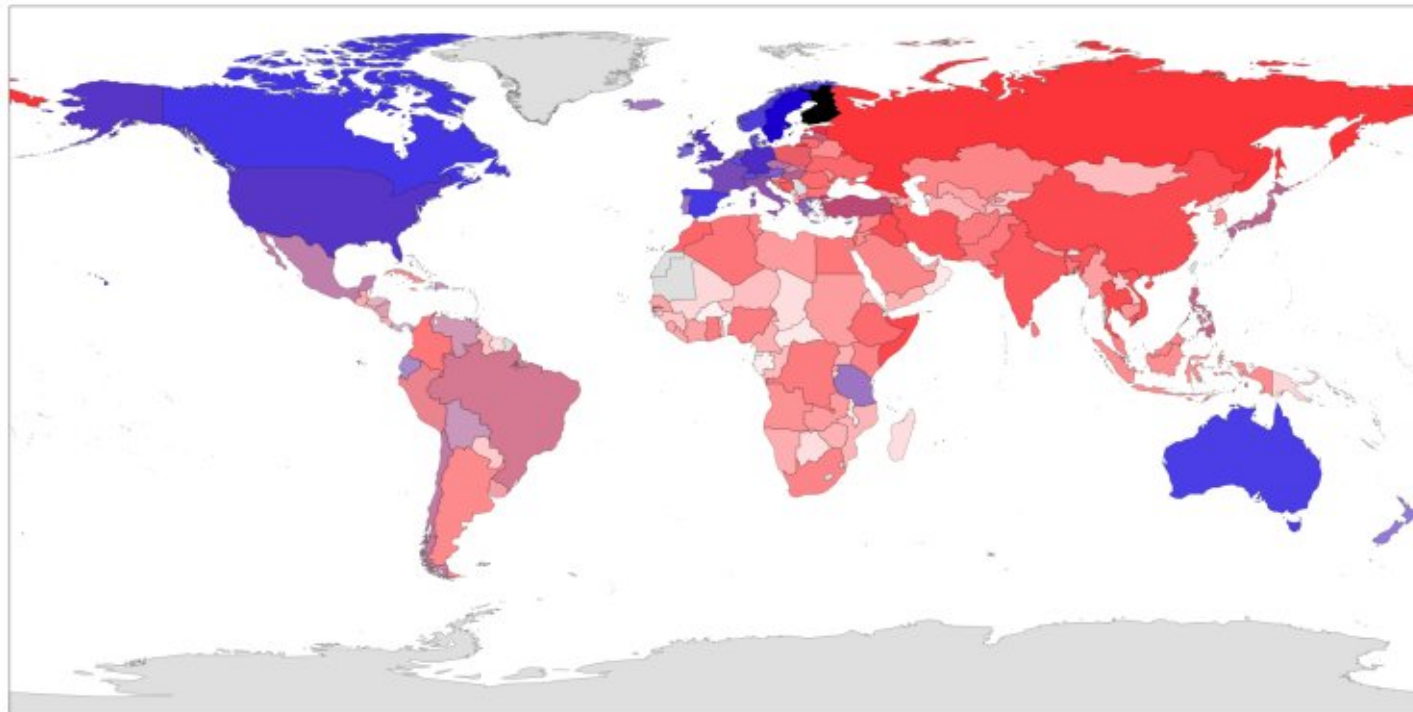


rOpenGov

open source ecosystem for open government data

Leo Lahti

University of Helsinki, Finland & Wageningen University, Netherlands
NIPS / MLOSS workshop. Lake Tahoe, December 10, 2013.



Open government data is opening up novel opportunities for research



elections
governance
demographics
economy
education
environment
traffic
trade
migration
etc.



MAANMITTAUSLAITOS
LÄNIMÄÄRIKIEKKI

Ongoing paradigm shift

closed data & custom tools -> open data & flexible tools

Science 6 February 2009:
Vol. 323 no. 5915 pp. 721-723
DOI: 10.1126/science.1167742

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PERSPECTIVE

SOCIAL SCIENCE

Computational Social Science

David Lazer¹, Alex Pentland², Lada Adamic³, Sinan Aral^{2,4}, Albert-László Barabási⁵, Devon Brewer⁶,
Nicholas Christakis¹, Noshir Contractor⁷, James Fowler⁸, Myron Gutmann³, Tony Jebara⁹, Gary King¹,
Michael Macy¹⁰, Deb Roy², Marshall Van Alstyne^{2,11}

[±](#) Author Affiliations

A field is emerging that leverages the capacity to collect and analyze data at a scale that may reveal patterns of individual and group behaviors.

Computational workflows
are having an increasingly central role
in social and political sciences



Computational workflows are having an increasingly central role in social and political sciences



-> Borrow approaches from other fields

(bioinformatics, climatology, economics, ecology, physics)

similar data formats, related analytical challenges !

Open Government Data



Open Analysis Tools

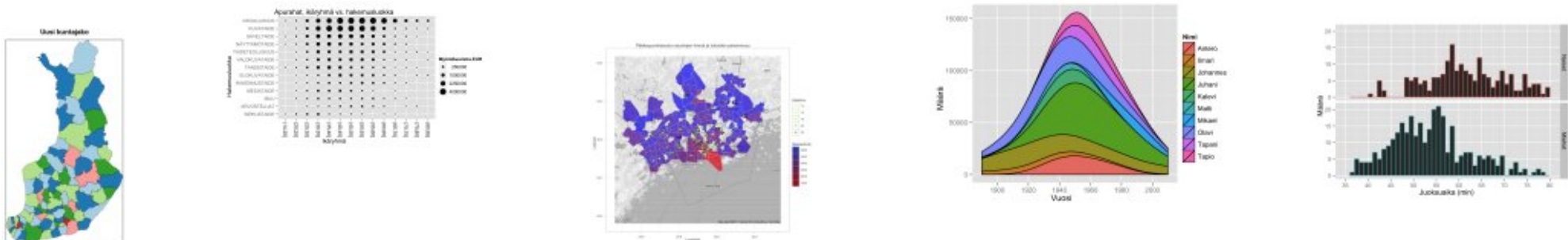
ropengov.github.io



rOpenGov

R/Github ecosystem for Open Government Data

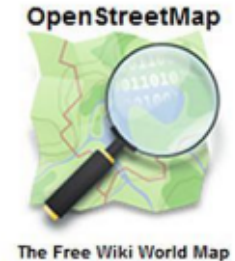
seamless integration of open data, algorithms and applications



Two objectives

1. Data Access

- programmatic access to data resources
- transparent & ready-made preprocessing
- data catalogues
- harmonized data structures?



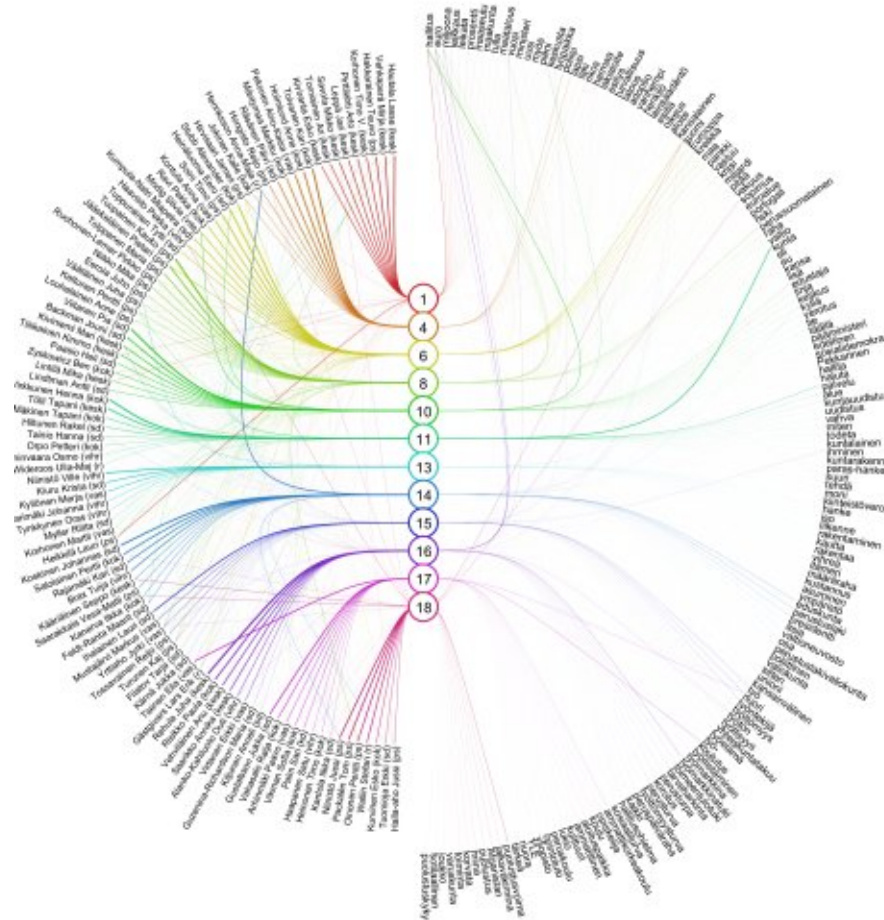
2. Data Analysis

- customized analysis algorithms for social science data
- standardization of analytical approaches



Topic model for Finnish parliament debates

Members of parliament

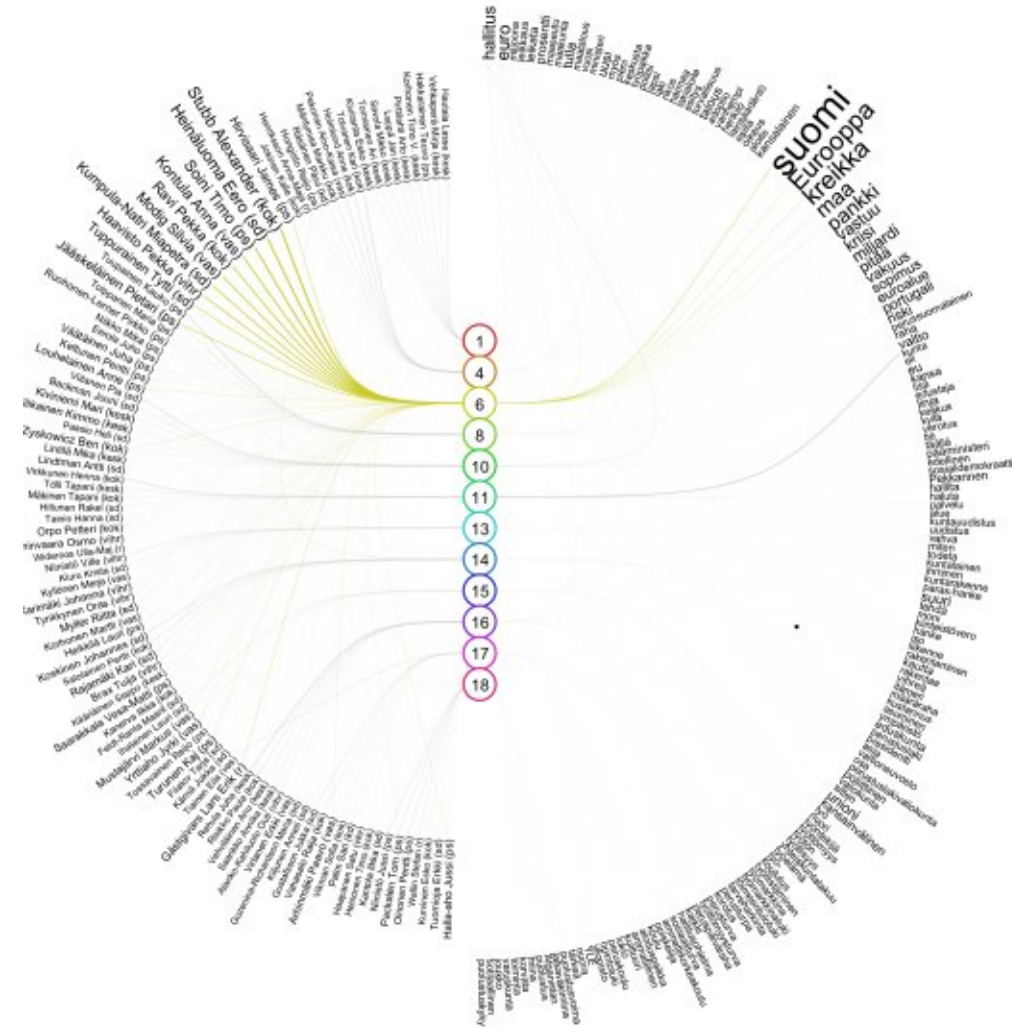


words

discussion topics

Data: Helsingin Sanomat

Euro crisis highlighted



New tools, new opportunities

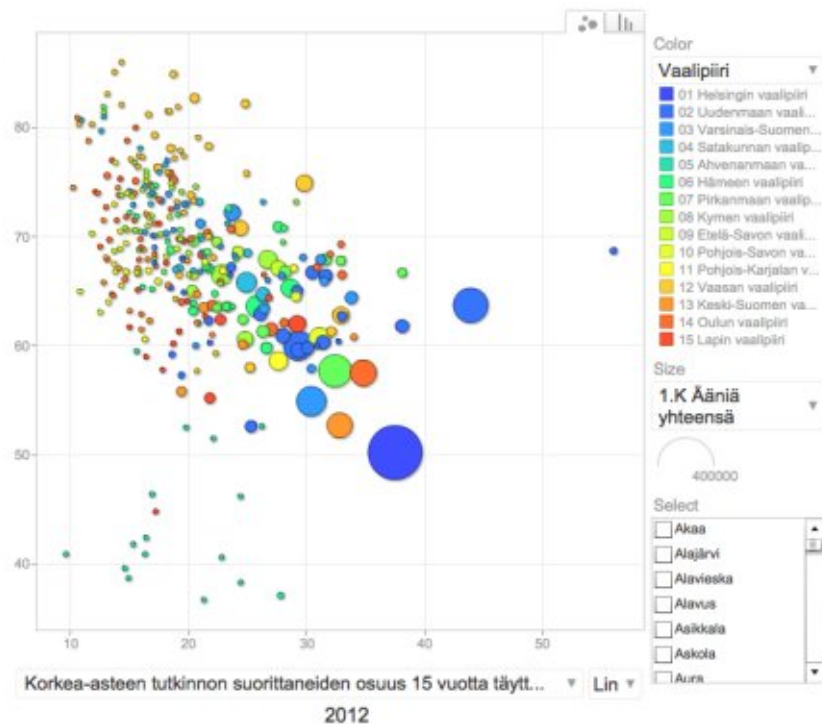
-> promoting collaboration between computational & social scientist through simplified access to data and analysis tools

- 1) **Programmatic access** to (already) thousands of governmental data resources across the globe
- 2) **Online documentation**
- 3) **Analytical tools** to monitor decision-making, demographics, economy, environment, historical data, etc.
- 4) **Transparent & reproducible** social science research
- 5) **Wider implications:** academic research, citizen science, data journalism, education, ...

Presidential elections - similar data in many countries

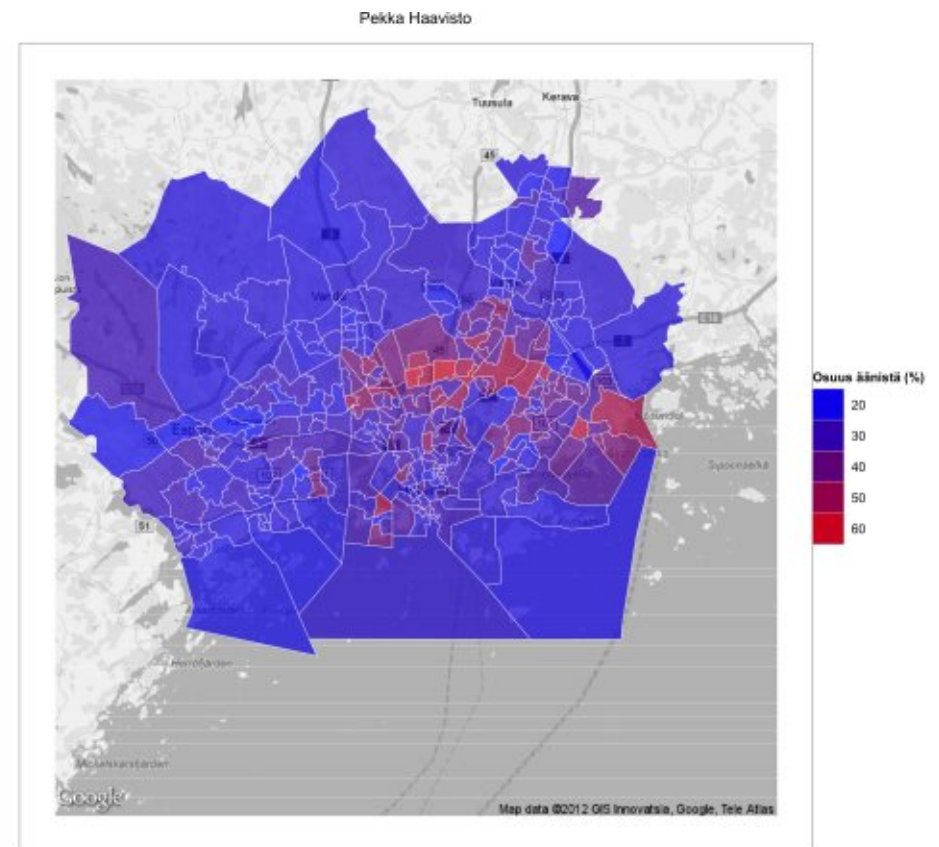
Popularity of presidential candidates by demographic factors and geography

-> European parliament elections 2014?



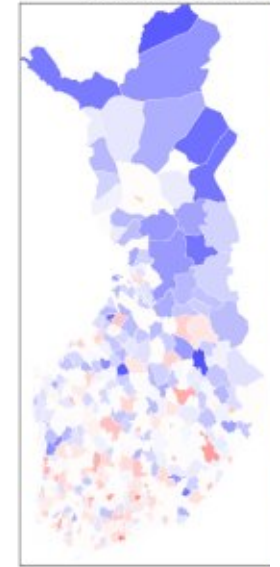
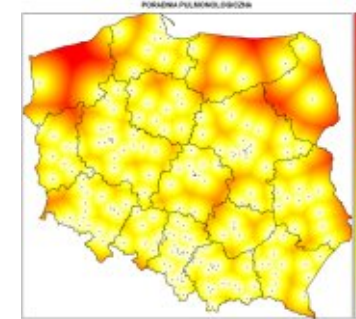
ab • Chart ID: MotionChartID5aad7ceed8ac
ion 2.14.1 (2011-12-22) • googleVis-0.2.13 • Google Terms of Use • Data Policy

Data: Helsingin Sanomat
Helsingin Kaupungin Kiinteistövirasto



rOpenGov projects:

- Austria
- Finland
- Poland
- Russia
- United States
- Open Street Map



Local initiatives - Global network

Related projects: countrycode; quandl; World Bank; PISA Student Assessment; timeline; geocode; National Assessment of Educational Progress; Data anonymization tools; ...

Thanks!



Juuso Parkkinen



Joonas Lehtomäki



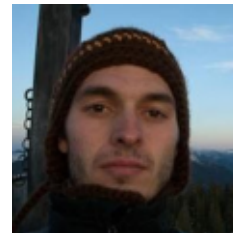
Open Knowledge Foundation



Markus Kainu



MAANY KÄÄNTÄJÄN LAJIKKAINEN KÄÄNTÄJÄT



Stefan Kasberger

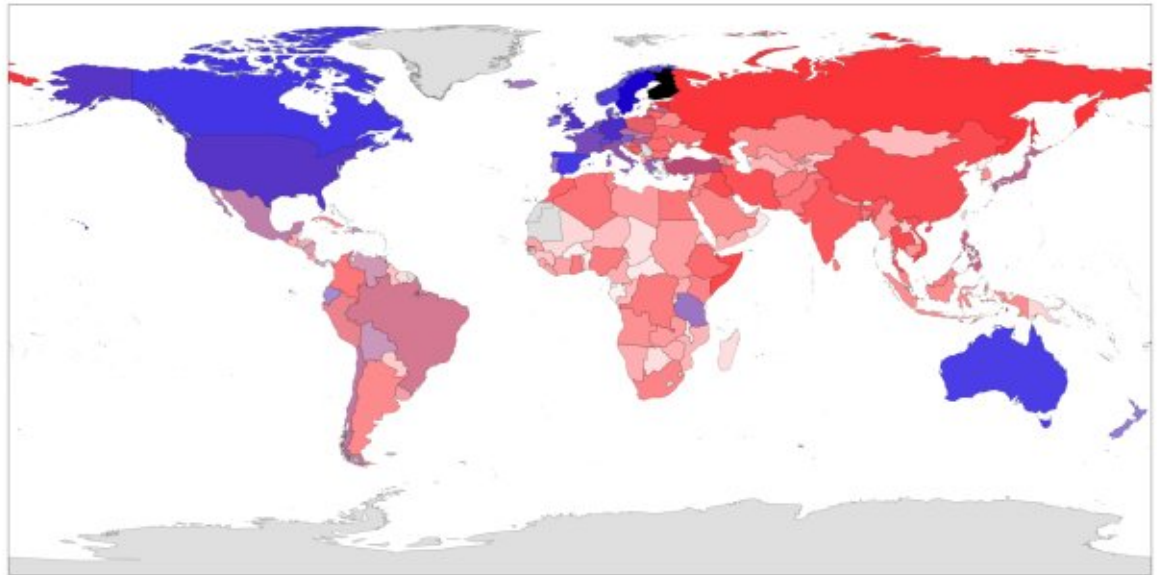


Scott Chamberlain

Przemyslaw Biecek
Manuel Eugster

Welcome to join: ropengov.github.io

Welcome to join and contribute !
ropengov.github.io^{beta}



Progress

2010 Project starts

2011 Data journalism workshops
Apps4Finland Data Opening Award

2012 SHARE-konferenssi (Belgrade)
Urban research seminar (Helsinki)
Collaboration with major Finnish media organizations (election data hackathon)
Sitra 14,000e funding for election data project
Open Legislative Data-conference (Paris)
Open Knowledge Festival (Helsinki)
Apps4Finland Data Opening Award (Data elections & Datawiki)

2013 Open Knowledge Foundation; Open Science work group
CRAN
Russia, US, Poland, Austria, OpenStreetMap packages join rOpenGov
Open Knowledge Roadshow (Turku, Finland)
Apps4Finland award (collaboration with Demos Helsinki think tank)
NIPS Machine Learning Open Source Software workshop (Lake Tahoe, US)

From Data to Knowledge

The scale and scope of data-driven social science are expanding rapidly and revolutionizing the field; data access and integration at a new level



Wisdom, Action



Knowledge, Understanding

Information, Facts



Observations, Data

Why R?

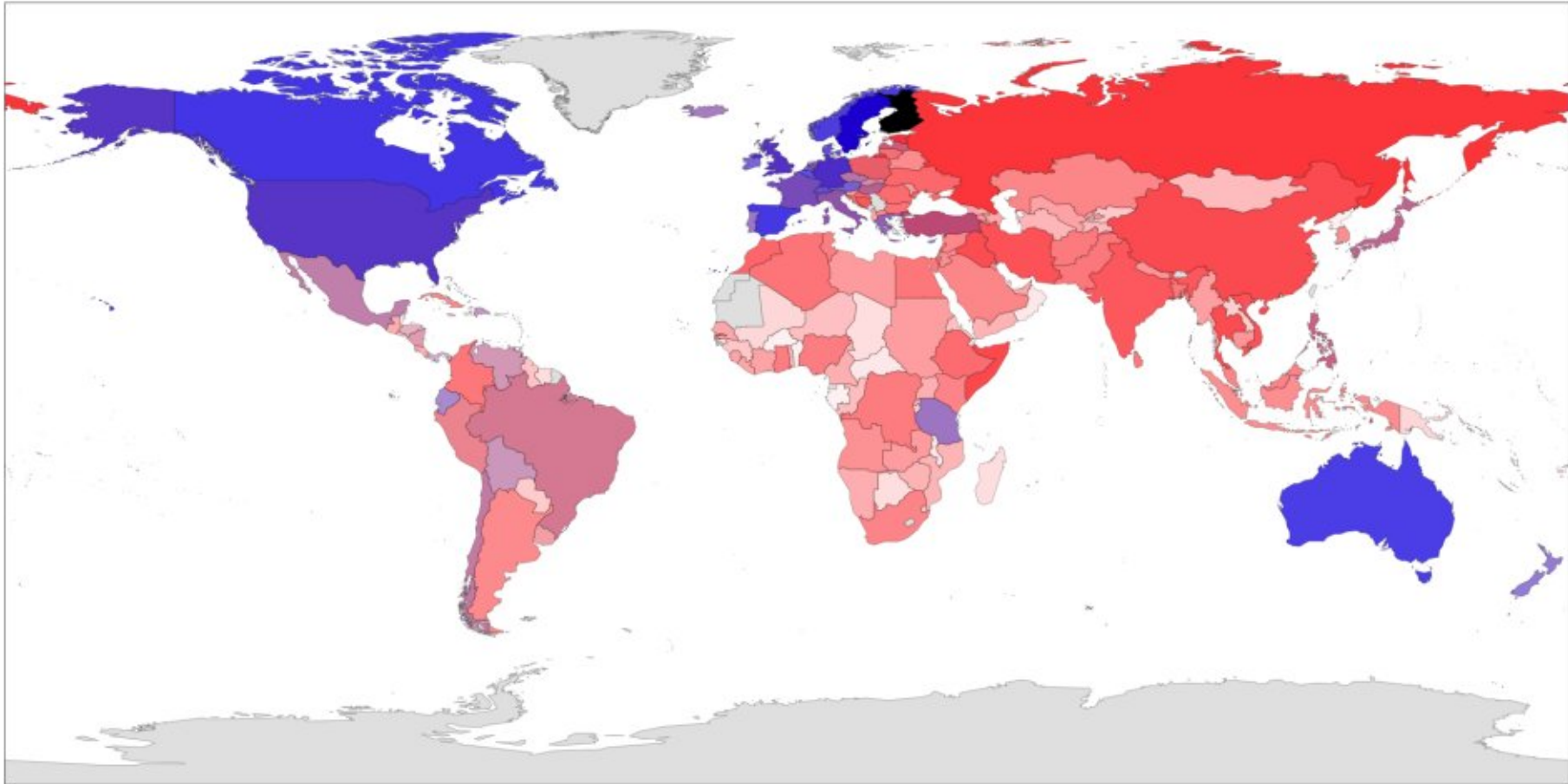
- practical & flexible everyday tools
- existing package ecosystem & critical mass
- active world-wide developer community
- established pipelines & community projects
- getting started & scaling up fast



Some readily available tools

Election results
Election funding
Parliamentary votings
Economical data
Land Survey Finland maps
Finnish environmental agency
Google Maps
OpenStreetMap
Helsinki region environment services
Helsinki accommodation office
Helsinki Region Infoshare
Housing prices
Culture
Education
Postal codes
Statistics Finland
Population registries
Name statistics
World bank
Quandl

Global challenges, local solutions!



Outreach

researchers/citizen scientists/journalists/organizations..