



The members of SoBigData have a consolidated experience in the analysis and modeling of economic and financial systems by using Big Data, complex network theory, and computational agent based modeling.

Stakeholders

Industry

Economic and Financial figures

Research



Human Mobility Analytics

Human behaviour analytics
Social and demographic indicators
Sport analytics
Air traffic management
Urban Mobility Planning
Traffic management
Mobility analytics for Smart Cities



Text and Social Media Mining

Text annotator and text analytics tools
High-quality financial ranking function
Bankruptcy prediction model
Customer- and domain-specific text mining
Bespoke interactive visualisations
Semantic analysis for financial networks



Social Network Analysis

Financial and Economic network analytics
Complex financial structures analytics
Topic lifecycle analytics in social media
News and financial behavior



Social Data

Spatial and Spectral clustering of consumer behavior
City dynamics investigations
Spatio-temporal data mining on mobile phone data
Static and dynamic analysis of online ego networks of politicians
Social and demographic indicators

What SoBigData can offer to you:

The SoBigData Research infrastructure comprises several kinds of resources, namely social datasets (e.g. foursquare check-ins, tweets), social data processing algorithms (e.g. mobility analytics, text analytics), and social data management services (e.g. data anonymization, algorithm parallelisation, large data storage). The RI will take care of the legal, ethical, methodological, and infrastructural issues arising from working with social data, in order to enable data scientists to focus on research itself.

It will provide access to the following key types of social data:

- Mobile and sensor data
- Social networks data
- Social media data, including Twitter, Facebook, and FourSquare content, organised into topic- and problem-specific social media virtual collections
- Mobility data, e.g. London Transport Oyster Card records and vehicular GPS trajectories
- Open social data and relevant Linked Open Data resources
- Other social data (such as one of the largest databases of Pinterest records)

Stories

Company risk score assessment via analysis of networks of companies and board members

To develop models for risk scoring, credit default prediction and bankruptcy prediction based on evolving networks of board memberships together with financial and tax data. ...

Large scale organization of financial and economic networks

To identify and characterize the large scale organization of financial and economic networks, focusing in particular on the inference of (i) the block structure organization (e.g. core-periphery, bipartite, modular, etc) and (ii) the hierarchical structure and ranking of nodes. Potential users are: (1) Researchers in financial and economic domains; (2) Regulators, such as central bankers, market surveillance bodies; (3) Financial intermediaries and such as banks and insurance companies, with large portfolios of customers. Developed methods and algorithms are usable also in other types of networks (e.g. technological, social, etc.) and therefore the set of users is potentially significantly larger...

Geo-Marketing: finding the best location for new business

There are several definition of good places to open an activity, in our experience the experts define it as "a place that people can see often in their normal activity at a certain distance from all other competitor." The process for the decision to open a new activity is complex but probably the first step is to find a good place. The idea is to give to an analyst a set of tools useful to analyze GPS data with the objective of producing an indicator of "quality" for different area of the city. ...

Statistically validated networks: Identification of unexpected links in complex networks

Development of algorithms and suitable statistical models of networks for the identification, under hypothesis testing, of over-expressed links (whose abundance in excess with respect to the model) and under-expressed links (whose abundance is much smaller to what expected from the model). ...

Information diffusion pattern detection for online media events and online marketing campaigns

To identify and characterize the effects of online media events and cross-channel online marketing campaigns via identification of network motifs and temporal information diffusion patterns. Project managers and analysts at media agencies will use network motifs for drawing parallels to past campaigns and planning new actions. Marketing directors of companies and PR managers of public sector organizations will use predictions to schedule external corrective actions, i.e. supporting a campaign with advertisements in additional channels. ...

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