Data Science and Its Applications to Social Research

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Big Data provide opportunities to study complex social systems, by the empirical observation of large-scale data of various types (numeric, ordinal, and nominal variables, symbolic data, texts, images, data streams, multi-way data, social networks, etc.).

The Web pervasive use in daily life is having an impressive effect on data production and consumption. IoT, Big Data, social networks are generating a data deluge able to change radically individual and social behaviors. We are facing a data revolution that is transforming the routines of production of data, once consolidated within the different disciplines. These changes are having important consequences such as the re-emergence of “data-driven” science, which is opposed to “hypotheses-driven” science. The availability of big data is facilitating the adoption of the “data first” model of science affirming that exploring existing data may be more useful than building models of why people behave the way they do. The social data revolution enables not only new business models, but also provides better instruments to support policy maker decisions.

This volume contains some selected papers, presented during the conference DS&SR 2019, about data science and its applications to social research. The papers published contain new methodological developments on social research on human behavior and society, developed by researchers from different domains, based on various sources or controlled experiments. Some papers present statistical methodologies, mainly used for Big Data analysis, such as Machine Learning model, Multidimensional data analysis, Composite Indicators, Performance analysis, Predictive models, Data Integration technique, Functional Data Analysis Model, Logistic model, Predictive performance, Markov Chain Monte Carlo. The applications mainly deal with social and economic aspects. In particular, the data concerning the university system analyze dropout rates, student mobility, and universities reputation. Another field of application is statistics and sports such as basketball, dance, and football. Among the economic aspects analyzed in this volume, we have risk

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analysis, with application to the corporate system and the household income system. Many applications confirm the informative power of Big Data.

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