threshold based and double connection based method. To test those methods, we have used a collection of over 4300 resumes from INRIA research report. The resulting networks not only show the overall structure of the whole corpus, but also present a semantic navigation map among the documents as well. We also compare the results of those three methods and discuss their differences, advantages and shortcomings from one another.

Identifying and modeling patterns of tetrapod vertebrate mortality rates in the Gulf of Mexico oil spill

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The accidental oil spill in the Gulf of Mexico in 2010 has caused perceptible damage to marine and freshwater ecosystems. The large quantity of oil leaking at a constant rate and the long duration of the event caused an exponentially increasing mortality of vertebrates. Using data provided by NOAA and USFWS, we assessed the effects of this event on birds, sea turtles, and mammals. Mortality rates (measured as the number of carcasses recorded per day) were exponential for all three groups. Birds were the most affected group, as indicated by the steepest increase of mortality rates over time. For sea turtles and mammals, an exponential increase in mortality was observed after an initial delay. These exponential behaviors are consistent with a unified scenario for the mortality rate for tetrapod vertebrates.

Modelling Urban Dynamics as Complex Systems

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Contemporary cities are, in essence, Complex Systems (CS) extremely interesting to investigate. A key feature is that Urban Environments provide big databases which are useful to analyze and to understand partial views of their own structure and dynamics. This represents an emergent research field where the generation and use of physical and digital information from cities is applied to design new applications, services and urban plans, as well as, to analysis social behaviors in cities. This field is multidisciplinary, in nature, where Computer Science, Urban Studies, e-Government, media studies, Open Data strategies and Web Services play important roles. Digital information about cities have different reliability. Current initiatives based on OpenData (e.g. ParisData, http://opendata.paris.fr/) aim to process this information, hoping to build useful mashups for cities. The aim of this work is to describe our experience analyzing WWW Data and Web Services, which are needed to simulate urban phenomenas, specifically urban catastrophes, and it is based on every modern city has a digital mirror where researches can access to information (and knowledge) about the city. The analysis have been developed into the context of "eCompleXcity project". One goal of this project is to study Complex Systems associated to Urban Informatics and Computing. We are interested in simulating urban processes by means of Multiagent Systems (MAS). MAS point of view of CS is quite natural because it considers that each module/node of system is an agent. From the Agent point of view, we can formally define its own behavior, as well as, its interaction with other agents. CS can evolve along time and new properties and behaviors emerge. Powerful tools to design CS in a high abstraction level are available. These tools also let us to create big scalable simulations(experiments) and this means a key point for MAS. Our framework has been applied to a case study: simulation of flooding caused by Katrina's hurricane in New Orleans.

Synchronization and Emergence

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Many natural and man-made systems are intrinsically complex entities consisting of a large number of interacting components. A key concept in this context is Emergence, that is, the question of how novel dynamics arise from the interaction of simple units. This talk will study emergence in the context of a particular but important behavior of networked systems, namely synchronization. Complete synchronization refers to the case where all units in the network display identical behavior. On the one hand, synchronization serves to amplify the output signal from the network; on the other hand, the complexity of the system is apparently