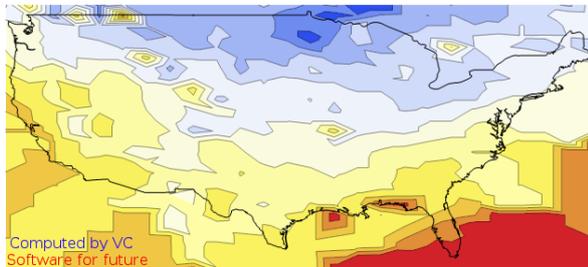


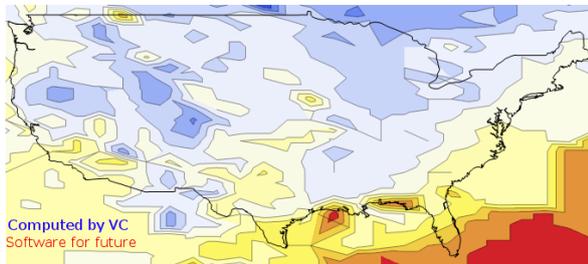
Selected Examples of Internet of Things (IoT), Big Data (BD) and Complex Information Systems (CIS) research outputs

Internet of Things (IoT), Big Data (BD) and Complex Information Systems (CIS) services, applications, technologies and proofs-of-concept can work extensively with experts across different disciplines. The combined effort from IoT, BD and CIS can showcase how different disciplines working together to produce greater impacts and contributions to research and enterprise communities.

Weather Science:



Temperatures in the US on February 7, 2014

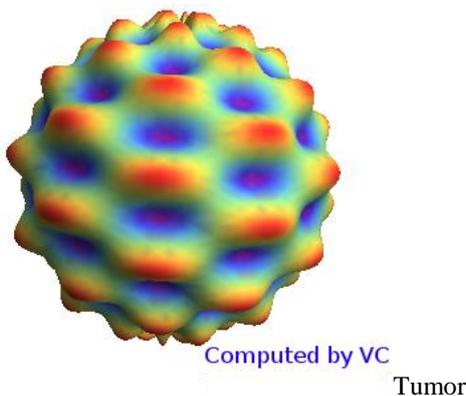


Temperatures in the US on January 10, 2014

IoT, BD and CIS can make huge contributions to Weather Science. While we are facing the challenge of climate change, extreme weathers are likely to happen as a norm rather than unlikely events. This brings a massive challenge to protect our environment. Scientists need to find innovative techniques for Weather Science which include forecasting, presentation and visualization. Contributors published in our journal can describe the steps and the methodologies involved in processing, analyzing and presenting IoTBD, BD and CIS.

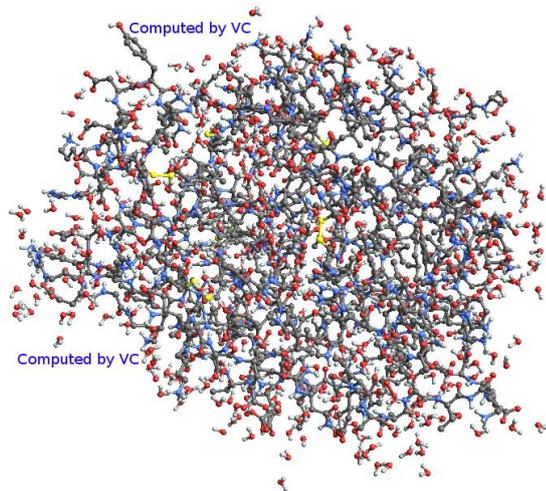
The two figures here show the temperatures in different parts of the United States on January 10 and February 7, 2014 respectively. On February 7, 2014, the highest temperature was 26 C in Miami and the lowest temperature was -17C in North Dakota. In the past 10 years, the widest range of temperature was hardly over 40 C. Climate change not only affects our life but also creates economic loss due to undesirable impacts. Gaining a better understanding of Weather Science allows scientists and the general public to be aware of the agenda and priorities in climate change.

Healthcare and Biological Science:



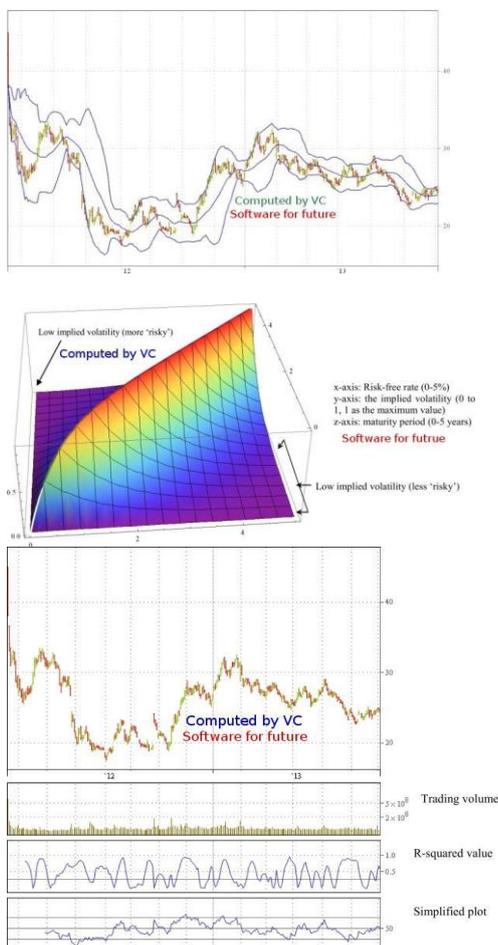
Healthcare and Biological Science are important topics. They are essential for research and development and for hospital care. Governments in the developed countries spend billions of dollars annually each year to improve the quality of research and services available. However, there are still challenges ahead. One of them is the cure of cancer. Although the survival rate has improved due to the quality of drugs and medical equipments, how tumors cells are developed and eventually how tumors become malignant tumors is not entirely known. Modern techniques in IoT, BD and CIS can help scientists and surgeons to understand the formation of the tumors, and find out ways to transform them into harmless tumors. In that way, better ways of treatments can be provided without introducing side effects. For example, tumors can become inactive or destroyed naturally without excessive chemotherapy and radiotherapy which can harm other human organs.

There are many mysteries in our human body. For example, do we know what happens to our human body in response of blood clotting when injuries or bruises happen? IoT, BD and CIS simulations can provide the answer. The figure on the left shows what happens during blood clotting. The protein *klkb1*, is responsible for such an action. It co-



ordinates all different *klkb1* to ensure instant blood clot while the antibody is fighting off the invaders. IoT, BD and CIS simulations can compute such complex phenomenon in a matter of seconds and offers accurate and real-time data analysis for scientists. Scientists can have more output and increased efficiency for their work. IoT, BD and CIS can offer simulations in other parts of human bodies quickly and accurately such as brain segmentation, insulin molecules, genes, proteins and DNA sequencing illustrated by my previous work.

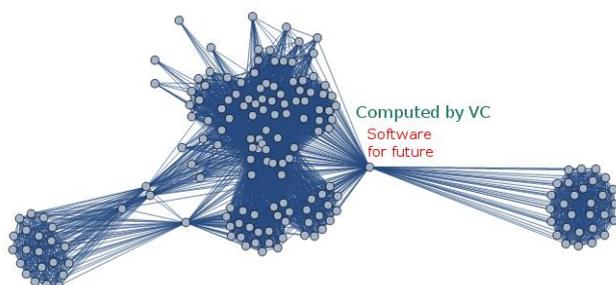
Finance and business intelligence analytics:



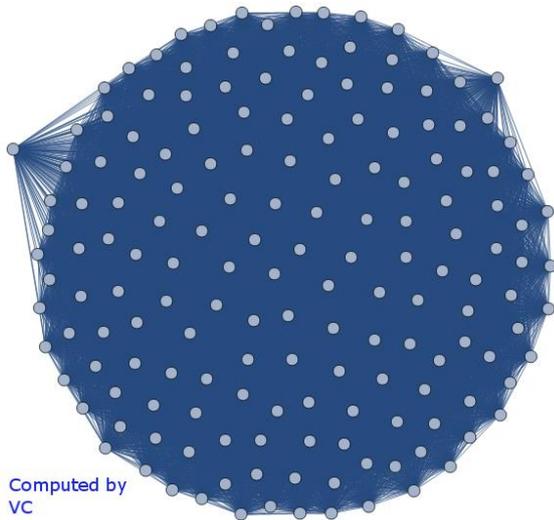
The Financial crisis of 2007-2009 happened as a result of a number of factors: collapse of housing market and mortgages, poor regulation and governance, ignorance of risks (which happened under 1-2%) and undesirable practices in financial services. Some Western countries have still not recovered fully up-to-date. Summaries from well-known journals also report that the finance industry takes excessive risks. Innovative ways to calculate risks, track and monitor them are becoming essential in financial analysis.

Similarly, modern methods to calculate the best buy and sell prices with regard to changes in risks are important. All these proposals can lead to the development of business intelligence analytics, which can accurately and promptly calculate prices and risks for any type of investments. It also provides warning and suggestions for any investment or business decisions. It can use data in the public cloud to calculate real-time financial derivatives within seconds and provides up to 99.99% accuracy. Risks can be presented in visualization to ensure that they can be easily tracked and monitored by investors who do not have technical backgrounds.

Social Cloud and Network



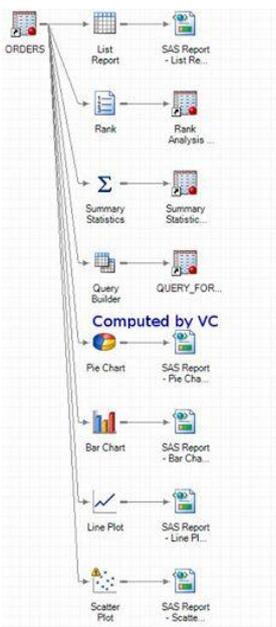
Social networks have changed the way that people interact and develop friendships. Although there are challenges related to privacy and security, understanding how people interact and their relationship is a complex issue. Friendship between different people may improve or dampen due to different circumstances and events. Understanding this complexity helps us consolidate relationships with our families and friends, and working relationships with colleagues and clients. Innovative approaches are encouraged to prompt the understanding between different people and to understand how to optimize our human networks and work relationships. Gaining this knowledge is



very useful for our day-to-day life. Similarly, transforming this knowledge into the development of sustainable business models can offer huge positive impacts to understand how to create social network websites that can get a large number of users and profits. IoT, BD and CIS are solutions for Social Cloud and Network to provide analysis of all the interactions.

Another example is illustrated by the figure on the left. If there are millions of threads discussed between active online communities, will you read each thread one by one? IoT, BD and CIS computing offers the methods, techniques and platform to compute all these within a few seconds. The system manager of social network sites can understand the traffic, relationship and volume between different online communities for a popular topic such as the death of Robin Williams.

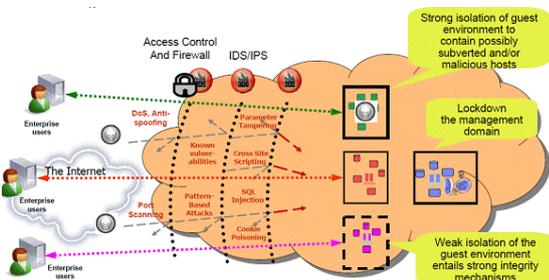
Business operations, strategies and processes / information systems (business schools):



IoT, BD and CIS are extremely useful to calculate complex business operations and processes. The end-results help the stakeholders to make important decisions. In this way, IoT, BD and CIS can help them to set suitable business strategies to ensure their companies are on the right track to retain reputation and profitability. The figure shows a business activity: orders (all orders from customers), which are involved with different business processes in the company. The stakeholders can have a clear view of the activities they are dealing with and the problems they are facing in the real-time. Up-to-date information is crucial for investors to make the right decisions in their business strategies and operations.

Our IoT, BD and CIS papers and journals welcome different perspectives and views from business school experts. The fusion between theory and practical approaches can give us a leading status similar to MIS Quarterly and Information Systems Research.

Security, privacy and data ownership:



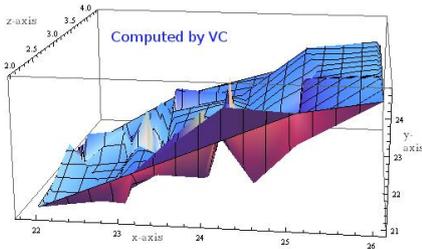
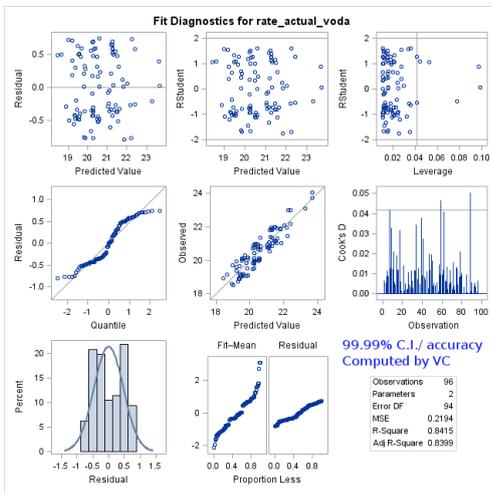
Security, privacy and data ownership are always essential for all businesses and individuals. We can ensure that all our data are safe and protected. Our activities can be kept private and confidential when we deal with sensitive data such as health records and financial transactions. There are different types of security solutions proposed by different groups. We welcome their contributions for security, privacy and data ownership. Such recommendations are very useful for any organization dealing with IoT, BD and CIS. The figure shows our proposed multi-layered security for IoT, BD and CIS to provide users a clean, safe and protected platform for processing and analyzing IoT, BD and CIS. The Editor-in-Chief and his team have demonstrated the effectiveness of multi-layered security that can block more than 99% of viruses and trojans in their ethical penetration tests. Security and privacy are crucially important in the development of IoT, BD and CIS services.

Social Science and Law:



IoT, BD and CIS are interdisciplinary research in which experts in other domains to take part and contribute, including Social Science and Law. Social Science experts focus on studying the impacts that IoT, BD and CIS can provide. They set hypotheses and use research methods to define and collect data. They analyze data and interpret their analysis. There are innovative papers addressing different issues in social science such as adoption/migration in IoT, BD and CIS, legal challenges, downsides of IoT, BD and CIS, case studies for the IoT, BD and CIS with recommendations (qualitative research). Similarly, legal experts are required as “grey areas” in IoT, BD and CIS such as ownership, copyright, infringement, different legal practices and updates in laws are required. Our journal will contain recommendations, strategies, insights and future directions from experts in social science and law.

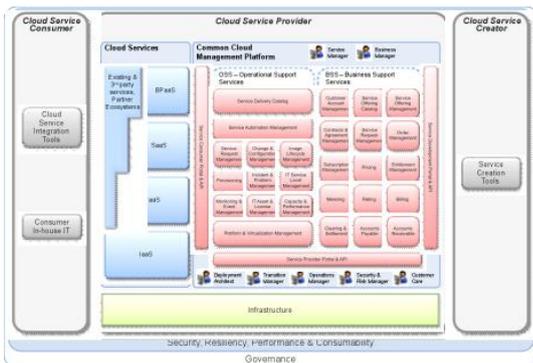
Big Data Processing Techniques, Statistics, Algorithms and Visualization:



IoT, BD and CIS techniques may be revolutionary; there is more to them than just MapReduce or Hadoop. Scientists and decision-makers are always searching for new techniques and algorithms. The benefits of doing so allow us to process IoT, BD and CIS quickly and correctly to obtain the information we seek. We can also ensure the quality of data is always high while processing the IoT, BD and CIS for analysis. Innovative techniques, algorithms and visualization are welcome.

Visualization is a useful technique supporting IoT, BD and CIS. The stakeholders or key-decision makers may not have the background for complex data analysis. Visualized results help them to understand and interpret data. Visualization can improve the quality of analysis by exposing unexploited areas that could have been missed in numerical computation, a typical technique used by IoT, BD and CIS processing.

Framework and best practices:



IoT, BD and CIS holds strategic roles for many organizations. In the process of migrating or adopting to IoT, BD and CIS, challenges need to be resolved. Lessons learned in each adoption case are unique and can be used by other organizations to follow, including the use of frameworks. We have the past and current experience in developing IoT, BD and CIS projects/services. For example, Cloud Computing Adoption Framework (CCAF) is used to deliver different projects to show how IoT, BD and CIS can be structured together for organizational adoption. Similarly, frameworks and best practice approaches with empirical investigations and case studies are welcome. We seek all types of recommendations for any type of organizations.