BIG DATA SHAPING THE FUTURE OF RETAIL

The development of Big Data and cloud computing has new and exciting implications for the retail sector, with new insights into consumer habits being extracted from retail Big Data and shared across multiple retail sectors.

Big Data and business go hand in hand, and nowhere are the benefits more visible than at the nexus of data analytics and the retail sector.

According to Associate Professor Jinjun Chen, a core member of UTS's Global Big Data Technologies Centre, the concept of Big Data entered the global consciousness in 2012. In the space of a few short years, it has transformed the way the retail industry gathers insights into customer behaviour.

Big Data refers to huge datasets that contain significant quantities of unstructured information. The management and analysis of large data sets has become more and more relevant within the data sciences discipline, and the introduction of cloud computing in recent years has resulted in a wealth of new business opportunities for data analysts and retailers alike.

"By 2020, more than 40 per cent of data will be 'touched' by the cloud – when we say touched we mean either stored or processed by the cloud," Chen says.

"With this in mind, we should be creating computing and storage platforms for processing Big Data. The cloud can provide a big pool of resources for storing and processing large datasets."

Chen works with cloud computing companies to help them leverage value from their customer data. For example, he says, most of us would never imagine that a supermarket might be collecting data that has relevance for travel agencies. Prior to the development of the cloud, there was no reason for these sorts of data to be stored side-by-side in the same location.

Now, however, these worlds are colliding: for example, if a supermarket's consumer data tells us that university students are more likely to stay up late, shop at night and seek out product bargains, then that information can provide some valuable insights for travel agencies looking to target that particular demographic.

Chen's research in this area is currently the focus of an ARC Linkage Project in partnership with cloud service provider Joowing Australia. This work is helping Joowing draw novel insights from seemingly unconnected client data. Chen and his team are developing what's called an information correlation-based similarity model, which identifies similarities between products and services in disparate sectors. Initially developed similarity models tend to work on a one-to-one basis, identifying one piece of data

that is similar or relevant to another piece of data in a seemingly disparate area. What Chen is trying to do now is create a model that searches out similarities between multiple series.

"Today I buy a suit, and tomorrow I may buy a shirt, and after that I may buy a belt. That's a series. So we're looking for similarity between a series of objects and another series," he says.

The research team is also developing privacy preservation technologies to protect consumers' personal details from being exposed in the data extraction process. It's the tip of the iceberg in what is still a relatively new field, but it places Big Data analytics firmly in the industry domain.

"Big Data is very much application oriented, and therefore relevant in a business context," Chen says.

"We are developing solutions that have relevance across a wide range of sectors, and we have to apply the solution to industry for effective business decisions."

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> ASSOCIATE PROFESSOR JINJUN CHEN, GLOBAL BIG DATA TECHNOLOGIES CENTRE
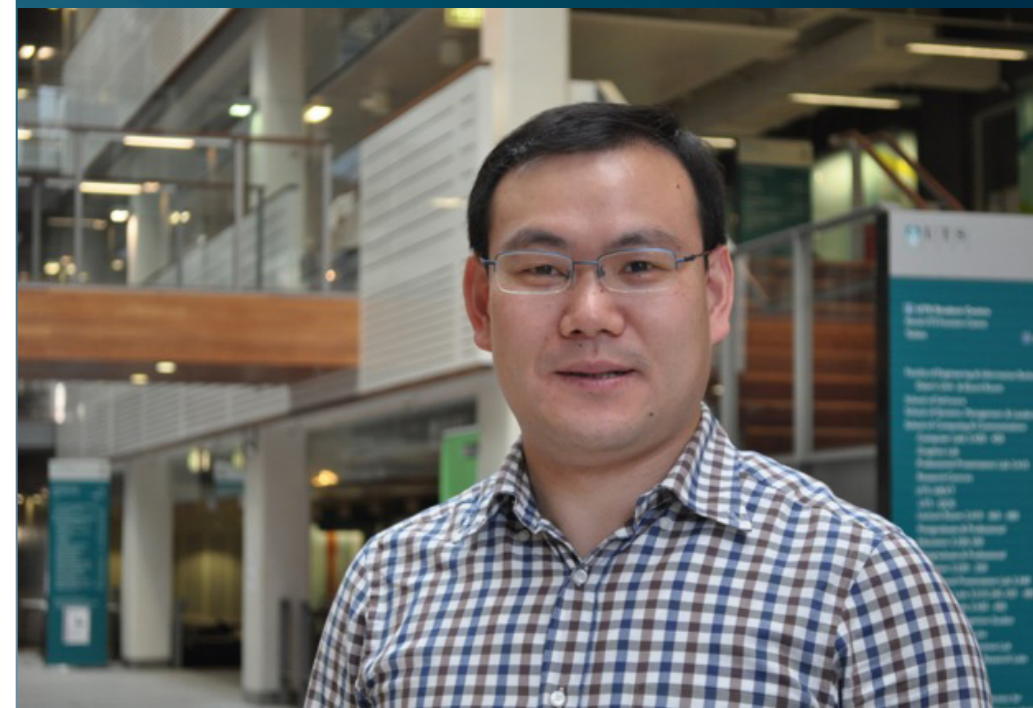
Associate Professor Jinjun Chen. Photo supplied.