

## Through Machine Reading to Big Mechanism

Since *Big Data* mainly aims to explore the correlation between surface features but not their underlying causality relationship, the *Big Mechanism* program was initiated by DARPA (USA) at 2014 to find out “why” behind the “Big Data”. Therefore, *Big Mechanism* emphasizes *knowledge discovery*, which is achieved via linking various documents and then performing inference over them. However, the pre-requisite for it is that the machine can read each document, understand its content, and learn its associated knowledge, which is the task of *Machine Reading* (MR).

In this talk, I will first explain how MR differs from traditional *Information Extraction* and *Q&A*, and then introduce our two domain-specific MR systems: *Math Word Problem Solving*, and *Social Studies Q&A*. The drawbacks of previous approaches (i.e., rule/statistics/DNN based approaches) will be discussed, and possible future directions will be also proposed. Afterwards, I will introduce the task of *Multi-Document Processing*, and its several applications. Last, I will introduce our framework of conducting this task and one its application for generating *Company/Person Profile*.