

A Mathematical trip into the Data Science realm

From credit transactions to electronic health records to satellites in space to wearable devices, the abundance of data has created an enormous opportunities for better understanding the world in which we live. Because of the new way of collecting data that has moved away from relying on prior theory or hypothesis in mind, most scientific disciplines can not be just consumers of existing theories and methodologies, but require new solutions and thus raise new questions in fundamental research. Data Science as a “catch-all” term has been recently used to describe the field that promises to harness the power of this “plethora” of data to advance scientific discovery and transform commercial industries.

In this talk, you will embark on a trip taking you all the way through from : *introducing Data Science as an emerging discipline combining aspects of mathematical sciences and computer science* ; to *discussing some of the new methodological challenges encountered in various scientific disciplines* ; to *presenting some of the promising solutions and the corresponding results of what I would describe as “theory guided design of models”*. Before landing, I will describe some exciting research directions ; which if interfaced strongly with applications domains would pave the way to the theoretical foundations of Data Science.

