

Predictive modeling for a complex world: a data-driven perspective

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We all experience complexity in everyday life where simple answers are hard to find and the consequences of our actions are difficult to predict. Understanding and modeling the complex nature of markets, peoples and societies have become a crucial scientific challenge with great practical impact. The current big-data revolution has provided unprecedented access to large amount of data for modeling and forecasting complex systems. However, analyzing, understanding, filtering and making use of such a large amount of data have also become a challenge in itself.

I will present methodologies based on the combination network theory, statistical physics, data science, multiscale analysis and computational methods to unwind complexity and produce robust and meaningful models that are capable to make reliable predictions.

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