Learning treatment effects from multiple data

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Much of intelligence behaviour involves causal reasoning by predicting the effects of interventions. Causal inferences require experimental data, collected specifically for the estimation of a specific treatment effect. Such data however are expensive, difficult to collect and therefore scarce. Recent advances in data collection and sharing capacity have made vast amounts of observational data, such as electronic health record data, available to researchers. However, observational data are not necessarily appropriate for causal inference. Combining observational and experimental data can greatly improve causal predictions. In this talk, we discuss how causal models offer a language that connects different types of data and allows generalizing inferences across domains and populations.